

TEXAS COMMISSION ON FIRE PROTECTION

April 28, 2011 at 10:00 a.m.

William B. Travis Bldg., 1701 N. Congress Avenue, Room 1-104, Austin, Texas

1. Roll call---10:00 a.m.
2. Adoption of the January 26, 2011 and March 14, 2011 Commission meeting minutes.
3. The Budget and Strategic Plan subcommittees will meet on April 28, 2011, during the commission meeting and may develop recommendations to be presented to the full commission including but not limited to, modifications to the agency operating budget and strategic plan. The subcommittees may meet separately or together.
4. Report from the Budget and Strategic Plan subcommittees with discussion and possible action relating to any recommendations developed by these subcommittees.
5. Reports from fire service interest groups and agencies on matters relating to organizational purposes, functions, and objectives, including, but not limited to, the Texas Fire Chiefs Association, the Texas State Association of Fire Fighters, the State Firemen's and Fire Marshals' Association of Texas, the Texas Association of Fire Educators, the Texas Forest Service, the National Fire Protection Association, and the State Fire Marshal's Office.
6. Discussion and possible action concerning reports by the Commission representative to the Texas Fire School Advisory Board and by representatives of the Texas Engineering Extension Service (TEEX) regarding fire protection training provided by TEEX through its Emergency Services Training Institute (ESTI).
7. New matters from the commission, staff, or public regarding rulemaking which may be discussed in future Commission meetings.
8. Discussion and possible action on future meeting dates.
9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including, but not limited to:
 - A. Discussion and possible final adoption on proposed amendments, new sections, repeals, and rule reviews as follows:
 1. Proposed amendments to 37 TAC, Chapter 401, Practice and Procedure, including, but not limited to §401.1(b) (3), Purpose and Scope.
 2. Proposed amendments to 37 TAC, Chapter 423, Fire Suppression, including, but not limited to §423.3(a) (2) (B) Minimum Standards for Basic Structure Fire Protection Personnel Certification; §423.201(b) Minimum Standards for Aircraft Rescue Fire Fighting Personnel.
 3. Proposed amendments to 37 TAC, Chapter 437, Fees, including but not limited to §437.3 (a) Certification Fees, §437.5 (a) (f) (j) (k) (n) Renewal Fees, and §437.13 (a) Processing Fees for Test Application.
 - B. Discussion and possible action on proposed amendments, new sections, repeals, and rule reviews as follows:
 1. Proposed amendments to 37 TAC, Chapter 427, Training Facility Certification, including, but not limited to §427.1(h) Minimum Standards for Certification Training Facilities for Fire Protection Personnel; and §427.201 (e), Minimum Standard for Distance Training Provider.

2. Proposed amendments to 37 TAC, Chapter 429, Minimum Standards for Fire Inspectors, including, but not limited to expiration and repeal of Subchapter A, §429.1, §429.3, §429.5, §429.7, §429.9, and §429.11, Subchapter B, Minimum Standards for Intermediate Fire Inspector Certification, §429.201 Minimum Standards for Fire Inspection Personnel, §429.203 Minimum Standards for Basic Fire Inspector Certification, §429.205 Minimum Standard for Intermediate Fire Inspector Certification, §429.207 (3) Minimum Standards for Advanced Fire Inspector Certification, §429.209 Minimum Standard for Master Fire Inspector Certification, and §429.211 (c) (d) International Fire Service Accreditation Congress (IFSAC) Seal.
 3. Proposed amendments to 37 TAC, Chapter 435, Fire Fighter Safety, including, but not limited to §435.1(d) (e) Protective Clothing; and §435.27, Live Fire Training Evolutions.
 4. Proposed amendments to 37 TAC, Chapter 437, Fees, including, but not limited to §437.7 (a) (b) Standards Manual and Certification Curriculum Manual Fees.
- C. Discussion and possible action on recommendations from the Curriculum and Testing Committee with regard to the Fire Investigator Curriculum, HazMat Awareness and HazMat Operations reference lists.
10. Discussion and possible action on acceptance of gifts to the commission with a value in excess of \$500.00
 11. Discussion and possible action on fire fighter injury data collected for 2010 for inclusion in the annual report to be sent to the State Fire Marshal's Office.
 12. Update from standards division director on matters relating to the activities of the following committees: International Fire Service Accreditation Congress, Respiratory Protection and Personal Alarm Equipment Committee, Fire Service Occupational Safety Committee, NFPA 1971 Technical Committee, and NFPA Technical Correlating Committee on Fire and Emergency Services Protective Clothing and Equipment.
 13. Discussion and possible action on matters from the Executive Director.
 - A. Report on decisions of the Executive Director in contested cases and consent orders.
 - B. Status of division functions.
 14. Executive session pursuant to Government Code, Section 551.074, for the discussion of personnel matters: the appointment, employment, compensation, evaluation, reassignment, duties, discipline, or dismissal of the Executive Director, and the appointment, employment, reassignment, or duties of personnel acting on an interim basis in this position.
 15. Open session for further discussion and possible action regarding preceding agenda item.
 16. Adjourn meeting.

The Texas Commission on Fire Protection may go into executive session on any agenda item if authorized by the Open Meetings Act, Texas Government Code Chapter 551.

1. Roll call---10:00 a.m.

2. Adoption of the January 26, 2011 and March 14, 2011 Commission meeting minutes.

TEXAS COMMISSION ON FIRE PROTECTION

Presiding Officer, Chris Connealy, at 10:00 a.m. called the January 26, 2011 meeting of the Texas Commission on Fire Protection to order at 1701 N. Congress Avenue, Room 1-104, Austin, Texas.

Attending	Les Bunte Carl Giles Arthur Pertile, III*	Elroy Carson* John Gillette Leonardo Perez	Chris Connealy Jody Gonzalez Steve Tull	Tony Cortes John Green	Yusuf Farran John McMakin
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*absent entire meeting

**absent part of meeting

Staff	Gary L. Warren, Sr. Jim Crowson, Assistant Attorney General	Deborah Cowan	Jake Soteriou	Ana Muñoz	Don Wilson
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Guests	Danny Kistner Mike Hunt Larry Wright Albert J. Castillo Brandi Plunkett Deidre Gothard	Danny Warner Cary Roccaforte Pat Hughes Randy Safer David Repp Jim Reidy	Mike Jones R. Craig Knolls, Jr. Tim Hunter Ronnie Gothard Chris Barron	John Dustin Ledford Jason Collier Jason Bear Wilson Scott D. Korwood Mark Warren
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| 1. Roll call | Secretary, John Gillette called roll and 11 of 13 commissioners were present. |
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| 2. Welcome of New Commissioner | The Presiding Officer introduced the new commissioner, John McMakin. |
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| 3. Adoption of Minutes | A motion to approve the minutes of the October 20, 2010 commission meeting was made by Steve Tull and seconded by Carl Giles. The motion carried. |
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| 4. Subcommittee Meetings | The subcommittees met together and discussed the agency's current budget and performance measures. |
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| 5. Budget and Strategic Plan Subcommittee Reports | No action necessary |
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| 6. Reports from Fire Service Interest Groups | Brief reports were given by the Texas State Association of Fire Fighters, Texas Fire Chief's Association, State Firemen's and Fire Marshals' Association and the National Fire Protection Association. |
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| 7. Report from Fire Service School Advisory Board & TEEEX | Commission representative, Michael Hunt gave a brief report on the activities of the board. |
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| 8. New matters | Status of on-line testing |
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9. Future Meeting Next Commission meeting scheduled for April 20, 2011 at 10:00 a.m.
Dates
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10. Matters from Fire Fighter Advisory Committee
- A. 1. A motion to approve for final adoption the proposed amendments to 37 TAC Chapter 427, §427.305 as discussed was made by Les Bunte and seconded by Leonardo Perez. The motion carried.
 - 2. A motion to approve for final adoption the proposed amendments to 37 TAC Chapter 431, §§431.1, 431.3, 431.13, 431.201 and 431.211 as discussed was made by Steve Tull and seconded by Carl Giles. The motion carried.
 - 3. A motion to approve for final adoption the proposed amendments to 37 TAC Chapter 435, new §435.25 as discussed was made by Les Bunte and seconded by Leonardo Perez. The motion carried.
 - 4. A motion to approve for final adoption the proposed amendments to 37 TAC Chapter 437, §§437.1, 437.5 and 437.7 as discussed was made by Tony Cortes and seconded by Steve Tull. The motion carried.
 - B. 1. A motion to approve for publication the proposed amendments to 37 TAC Chapter 401, §401.1 as discussed was made by John Gillette and seconded by Carl Giles. The motion carried.
 - 2. A motion to approve for publication the proposed amendments to 37 TAC Chapter 423, §423.3 and §423.201 as discussed was made by Tony Cortes and seconded by Les Bunte. The motion carried.
 - C. Jim Reidy, Chairman of the Fire Fighter Advisory Committee gave an update on the issue of reciprocity and Pro Board. After discussion, no action taken.
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11. Higher Levels of Certification
- A motion to approve the additional classes/courses to the A & B List as identified and discussed was made by John Gillette and seconded by John Green. The motion carried.
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12. Appointment to fill vacancy on Fire Fighter Advisory Committee
- A motion to accept the nomination of Jason Collier of the Highland Village Fire Department as the new member to fill the vacancy on the Fire Fighter Advisory Committee was made by Tony Cortes and seconded by Fire Fighter Carl Giles. The motion carried.
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13. Staff update on NFPA Committee
- Jake Soteriou informed commissioners the agency had not attended any NFPA committee meetings this quarter. Mr. Soteriou also noted that Mollie Clakley the agency's IFSAC Committee representative would be attending the IFSAC conference in April and would have a report for the Activities at the April commission meeting.
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14. Matters from Executive Director
- a. Mr. Warren provided commissioners a list of results from agency informal conferences.

- b. Mr. Warren updated the commissioners on the Legislative Budget Board's (LBB) recommendation for the agency's FY12-13 budget as outlined in House Bill 1. He also reported the agency had conducted training for new commissioner McMakin as required by statute. He also informed commissioners their current state issued credit card would expire at the end of February due to a new state contract with CitiGroup.

15. Executive Session

Presiding Officer, Chris Connealy called the Executive Session at 4:35 p.m.

16. Open Session

The commission returned to open session at 5:00 p.m. No action taken.

17. Adjournment

A motion to adjourn was made by Carl Giles and seconded by Tony Cortes. The motion carried.

Chris Connealy, Presiding Officer

TEXAS COMMISSION ON FIRE PROTECTION

Presiding Officer, Chris Connealy, at 9:00 a.m. called the March 14, 2011 meeting of the Texas Commission on Fire Protection to order at 1701 N. Congress Avenue, Room 1-104, Austin, Texas.

Attending	Les Bunte Carl Giles	Elroy Carson** John Gillette Arthur Pertile, III	Chris Connealy Jody Gonzalez** Leonardo Perez	Tony Cortes* John Green Steve Tull	Yusuf Farran John McMakin
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*absent entire meeting
**absent part of meeting

Staff	Gary L. Warren, Sr. Jim Crowson, Assistant Attorney General	Deborah Cowan	Jake Soteriou	Ana Muñoz	Don Wilson
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Guests	Tim Gardner Tom Harmon Jim Reidy	David Giordano Jerry Doyle Mike Higgins	Michael Foster Chris Barron Mo Davis	Jay Sikes Scott Kerwood R. Craig Kolls, Jr.	Noel Horan Brian Dunn
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1. Roll call Secretary, John Gillette called roll and 10 of 13 commissioners were present.
 2. 37 TAC,
Chapter 437 A motion to approve for publication the changes to Chapter 437 as discussed was made by Yusuf Farran and seconded by Elroy Carson. The motion carried.
 3. Executive Session Presiding Officer, Chris Connealy did not call the Executive Session.
 4. Open Session No action necessary
 5. Adjournment A motion to adjourn was made by Yusuf Farran and seconded by Leonardo Perez. The motion carried.

Chris Connealy, Presiding Officer

- 3. The Budget and Strategic Plan subcommittees will meet on April 28, 2011, during the commission meeting and may develop recommendations to be presented to the full commission including but not limited to, modifications to the agency operating budget and strategic plan. The subcommittees may meet separately or together.**

TCFP FY11 Measures, FY10 Strategic Plan

Key	Division	FY11 1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	FY11 YTD Sum	FY11 Target	% Target ytd/tar	Measures/Explanation
Output <i>A quantifiable indicator of the number of goods or services an agency produces</i>									
	<input type="checkbox"/>	Lib	01-01-01:01	123	141	264	868	30%	Number of requests from fire department and other entities for agency training and education resources.
						Cumulative			Lower than expected as demand is down.
	<input type="checkbox"/>	Lib	01-01-01:02	36	26	62	124	50%	Number of research requests for agency information resource center.
						Cumulative			On track to exceed target.
	<input type="checkbox"/>	Std	02-01-01:01	124	117	241	600	40%	Number of inspections of regulated entities.
						Cumulative			A little lower because there is no inspector for Region 1
	<input type="checkbox"/>	Std	02-01-01:02	2,096	2,047	4,143	9,000	46%	Number of new certifications issued to individuals.
						Cumulative			On track to meet target
	<input type="checkbox"/>	Std	02-01-01:03	25,365	470	25,835	26,500	97%	Number of certifications renewed (individuals).
						Cumulative			On track to exceed target.
	<input type="checkbox"/>	Std	02-01-01:04	2,417	1,927	4,344	10,000	43%	Number of individuals examined.
						Cumulative			Slightly behind target because agency no longer administers skills test.
	<input type="checkbox"/>	Adm	04-01-01:01	3,247	5,581	8,828	13,000	68%	Dollar value of HUB contacts awarded.
						Cumulative			
Explanatory (Annual) <i>An indicator of factors, agency resources, or requests received that affect a state entity's performance.</i>									
	<input type="checkbox"/>	Fin	01-02-01:01	0		0	1,000,000	0%	Amount available to fire departments for loans and grants.
						Cumulative			Program transferred to Texas Forest Service.
	<input type="checkbox"/>	Fin	01-02-01:02	0		0	3,779,224	0%	Amount requested by fire departments for loans and grants.
						Cumulative			Program transferred to Texas Forest Service.
	<input type="checkbox"/>	Std	02-01-01:01	91.06	90.61	91	92	99%	Pass Rate (Percent)
						Non-Cumulative			On target
	<input checked="" type="checkbox"/>	Std	02-01-01:02	28,641	29,385	28,641	26,750	107%	Number of fire service personnel certified by the Commission.
						Non-Cumulative			Exceeded target.
	<input type="checkbox"/>	Std	02-01-01:03	236	215	236	210	112%	Number of fire service training facilities certified by the Commission.
						Non-Cumulative			Exceeded target.

Cumulative Measure: A measure for which one quarter's performance can be added to a previous quarter's performance to obtain year-to-date performance; otherwise, a measure is non-cumulative.

Non-Cumulative Measure: A measure which, in order to determine year-to-date performance, must be calculated for the entire reporting period and not on the basis of adding together the performance from separate reporting periods

TCFP FY11 Measures, FY10 Strategic Plan

Key	Division	FY11 1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	FY11 YTD Sum	FY11 Target	% ytd/tar	Measures/Explanation
Efficiency <i>A quantifiable indicator of productivity expressed in unit costs, units of time, or other ratio-based units</i>									
<input type="checkbox"/>	Std	02-01-01:01	1.89	19.09		3.34	6	56%	Average certification cost per individual certificate issued.
						Non-Cumulative			Below target which is goal, aided by the fact the majority of renewals issued in first quarter.
<input type="checkbox"/>	Std	02-01-01:02	2.23	2.25		2.25	2.5	90%	Average certification cost per facility certificate issued.
						Non-Cumulative			Below target which is goal.
<input type="checkbox"/>	Std	02-01-01:03	98.09	97.51		97.51	90	108%	Percentage of new individual certificates issued within 10 days.
						Non-Cumulative			Exceeded target
<input type="checkbox"/>	Std	02-01-01:05	35.09	40.97		37.70	21	180%	Average cost per exam administered.
						Non-Cumulative			Cost higher due to the fact Commission removed skills testing during written test for structure.
Outcome <i>(Annual) A quantifiable indicator of the public and customer benefits from an agency's actions</i>									
<input checked="" type="checkbox"/>	Fin	01-02:01	0			0.0%	32%	0%	Percent of total amount requested for loans/grants compared with requests awarded.
						Non-Cumulative			Program transferred to Texas Forest Service.
<input checked="" type="checkbox"/>	Std	02-01:01	93%	94%		94.0%	95%	99%	Percent of inspected certificate holders with no recent violations.
						Non-Cumulative			On target.
<input type="checkbox"/>	Fin	04-01:01	6%	0		6.0%	10%	60%	Percent of total dollar value of purchasing contracts awarded to HUBs.
						Non-Cumulative			

Note: Explanations are provided for measures that are 5% or more off target. Targets were requested in the FY10 operating budget document.

Texas Commission on Fire Protection
Fiscal Year 2011 - Operating Budget

Updated: 3/7/11

Thru: February 28, 2011

Summary

	FY11	FY11			
Goals:	Budget	Expended	Encumb	Balance	%
Education, Information and Assistance	48,778	24,389		24,389	
Fire Department Standards	1,061,668	551,284		510,384	
Indirect Administration	707,006	349,449		357,557	
Merit Budget					
1001 - Salaries & Wages:	1,817,451	925,122	0	892,329	49%
Education, Information and Assistance	1,480	240		1,240	
Fire Department Standards	106,666	11,320		95,346	
Indirect Administration	70,893	11,052		59,840	
1002 - Other Personnel Costs	179,039	22,612	0	156,427	87%
Education, Information and Assistance	0	0		0	
Fire Department Standards	0	0		0	
Indirect Administration	9,072	0		9,072	
2001 - Professional Fees and Services:	9,072	0	0	9,072	100%
Education, Information and Assistance	1,749	1,402		347	
Fire Department Standards	14,191	6,819		7,372	
Indirect Administration	2,390	721		1,669	
2003 - Consumable Supplies:	18,330	8,942	0	9,388	51%
Education, Information and Assistance	291	97		194	
Fire Department Standards	25,233	8,552		16,681	
Indirect Administration	4,788	1,353		3,435	
2004 - Utilities:	30,312	10,001	0	20,311	67%
Education, Information and Assistance	0	0		0	
Fire Department Standards	71,976	15,488		56,488	
Indirect Administration	19,524	4,803		14,721	
2005 - Travel:	91,500	20,292	0	71,208	78%
Education, Information and Assistance	525	0		525	
Fire Department Standards	2,136	890		1,246	
Indirect Administration	1,188	594		594	
2006 - Rent - Building (storage):	3,849	1,484	0	2,365	61%
Education, Information and Assistance	1,200	149		1,051	
Fire Department Standards	14,100	3,988		10,112	
Indirect Administration	7,700	2,087		5,613	
2007 - Rent - Machine and Other:	23,000	6,224	0	16,776	73%
Education, Information and Assistance	3,259	1,195		2,064	
Fire Department Standards	133,230	16,321		116,909	
Indirect Administration	27,626	9,338		18,288	
2009 - Other Operating Expense:	164,115	26,853	0	137,262	84%
Education, Information and Assistance	1,000,000	1,000,000		0	
Fire Department Standards	0	0		0	
Indirect Administration	0	0		0	
4000 - Grants:	1,000,000	1,000,000	0	0	0%
Education, Information and Assistance	11,000	8,443		2,557	
Fire Department Standards	0	0		0	
Indirect Administration	0	183		-183	
5000 - Capital Expenditures:	11,000	8,627	0	2,373	22%
TOTAL - ALL EXPENDITURES	3,347,668	2,030,156	0	1,317,512	39%
			3,347,668	0	* diff
Assumes \$60,000 in IFSAC seals:		Appropriated Amt in GAA:	3,347,668	0	

Texas Commission on Fire Protection
Fiscal Year 2011 - Operating Budget

Thru: February 28, 2011

Goal A: Education, Info and Assistance

	Library	IT	Grants	Total	%
Budget:	48,778	0	0	48,778	0
Expended:	24,389	0	0	24,389	
1001 - Balance Salaries & Wages:	24,389	0	0	24,389	50%
Other Personnel Costs:					
7017- One-Time Merit	0	0	0	0	
7022- Longevity Pay	240	0	0	240	
7023- Lump Sum Termination	0	0	0	0	
Budget:	1,480	0	0	1,480	0
Expended:	240	0	0	240	
1002 - Balance Other Personnel Costs	1,240	0	0	1,240	84%
Professional Fees and Services:					
7245- Financial & Accounting Services	0	0	0	0	
7253- Other Professional Fees (EAP)	0	0	0	0	
7274- Temporary Employment Agencies	0	0	0	0	
7275- Computer Programming Services	0	0	0	0	
Budget:	0	0	0	0	0
Expended:	0	0	0	0	
2001 - Balance Professional Fees and Services:	0	0	0	0	#DIV/0!
Budget:	1,749	0	0	1,749	0
Expended:	33	1,369	0	1,402	
2003 - (7300) Balance Consumable Supplies:	1,716	(1,369)	0	347	20%
Utilities:					
7501- Electricity	0	0	0	0	
7503- Telecommunications-Long Distance	0	0	0	0	
7504- Telecommunications-Monthly Charge	97	0	0	97	
7514- Telecommunications-Maint & Repair	0	0	0	0	
7516- Telecommunications-Other Charges (reg voice/internet)	0	0	0	0	
7517- Telecommunications Equipment-Expensed	0	0	0	0	
Budget:	291	0	0	291	0
Expended:	97	0	0	97	
2004 - Balance Utilities:	194	0	0	194	67%
Travel:					
7101- Travel I/S - Public Transportation Fares	0	0	0	0	
7102- Mileage	0	0	0	0	
7104- Travel I/S - Actual Expense Overnight	0	0	0	0	
7105- Travel I/S - Incidental Expenses	0	0	0	0	
7106- Travel I/S - Meals & Lodging	0	0	0	0	
7107- Travel I/S - Non-Overnight Travel (Meals)	0	0	0	0	
7110- Travel I/S - Board Member Meals & Lodging	0	0	0	0	
7111- Travel OOS - Public Transportation Fares	0	0	0	0	
7112- Travel OOS - Mileage	0	0	0	0	
7115- Travel OOS - Incidental Expenses	0	0	0	0	
7116- Travel OOS - Meals, Lodging Allowable	0	0	0	0	
7135- Travel I/S - State Occupancy Tax	0	0	0	0	
Budget:	0	0	0	0	0
Expended:	0	0	0	0	
2005 - Balance Travel:	0	0	0	0	#DIV/0!
Budget:	525	0	0	525	0
Expended:	0	0	0	0	
2006 - (7470) Balance Rent - Building (storage):	525	0	0	525	100%

Texas Commission on Fire Protection
Fiscal Year 2011 - Operating Budget

Thru: February 28, 2011

Goal A: Education, Info and Assistance

	<u>Library</u>	<u>IT</u>	<u>Grants</u>	<u>Total</u>	<u>%</u>
Rent - Machine and Other:					
7406- Rental - Furnishings & Equipment (copier)	123	0	0	123	
7411- Rental - Computer Equipment	26	0	0	26	
Budget:	1,200	0	0	1,200	0
Expended:	149	0	0	149	
2007 - Balance Rent - Machine and Other:	1,051	0	0	1,051	88%
Other Operating Expense:					
7201- Membership Dues	195	0	0	195	
7203- Registration Fees-Employee Training	87	0	0	87	
7210- Fees & Other Charges (DPS)	0	0	0	0	
7211- Awards	0	0	0	0	
7216- Insurance Premiums - appvd by oag	0	0	0	0	
7262- Maint & Repair - Computer Software	0	0	0	0	
7267- Maint & Repair - Computer Equipment	0	0	0	0	
7273- Reproduction & Printing	0	0	0	0	
7276- Communication Services (T-1 Line)	33	0	0	33	
7281- Advertising Services	0	0	0	0	
7286- Freight & Delivery Services	0	0	0	0	
7291- Postage & Postal Services	337	0	0	337	
7299- Purchased Contracted Services	1	0	0	1	
7303- Subscriptions, Periodicals and Info Services	0	0	0	0	
7312- Medical Supplies	0	0	0	0	
7330- Parts -equip, furn	0	0	0	0	
7334- Furnishings & Equipment -Expensed	0	0	0	0	
7335- Parts -Computer Equipment - Expensed	0	0	0	0	
7354- Bldg Remodel - State Leased -Expensed	0	0	0	0	
7367- Personal Property - Maint & Repair	0	0	0	0	
7374- Personal Property-Furn & Equip - Controlled	0	0	0	0	
7377- Computer Equipment - Expensed	0	0	0	0	
7378- Computer Equipment - Controlled	0	0	0	0	
7379- Computer Equipment - Cap (>1,000)	0	0	0	0	
7380- Computer Software - Expensed	525	0	0	525	
7382- Books - Expensed	0	0	0	0	
7806- Interest on Delayed Payment	0	0	0	0	
7947- Workers Compensation Transfer (SORM)	0	0	0	0	
7953- SWCAP payment/cost allocation	0	0	0	0	
7961- STS Transfers-Telecommunications (TexAn)	16	0	0	16	
Budget:	3,259	0	0	3,259	0
Expended:	1,195	0	0	1,195	
2009 - Balance Other Operating Expense:	2,064	0	0	2,064	63%
Grants:					
7312- Medical Supplies	0	0	0	0	
7623- Grants- Community Serv. Programs	0	0	1,000,000	1,000,000	
7701- Loans to Political Subdivisions	0	0	0	0	
Budget:	0	0	1,000,000	1,000,000	0
Expended:	0	0	1,000,000	1,000,000	
4000 - Balance Grants:	0	0	0	0	0%
Capital Expenditures:					
7354- Remodeling of Bldg-State Owned - Capitalized	0	0	0	0	
7389- Books, Pre-Recorded Ref Material - Capitalized	8,443	0	0	8,443	
Budget:	11,000	0	0	11,000	0
Expended:	8,443	0	0	8,443	
5000 - Balance Capital Expenditures:	2,557	0	0	2,557	23%
Budget:	68,282	0	1,000,000	1,068,282	
Expended:	34,545	1,369	1,000,000	1,035,915	
TOTAL BALANCE	33,736	(1,369)	0	32,367	3%

Texas Commission on Fire Protection

Fiscal Year 2011 - Operating Budget

Thru: February 28, 2011

Goal B: Fire Department Standards

	Mgmt	Complnc	Cert	Testing	Curr Dev	Total	%
Budget:	91,542	433,925	225,790	271,999	90,456	1,113,713	-52,045
Expended:	45,771	213,096	94,895	152,294	45,228	551,284	
1001 - Balance Salaries & Wages:	45,771	220,829	130,895	119,705	45,228	562,428	51%
Other Personnel Costs:							
7017- One-Time Merit	0	0	0	0	0	0	
7022- Longevity Pay	600	3,560	2,160	4,320	680	11,320	
7023- Lump Sum Termination	0	0	0	0	0	0	
7030- Employee Incentive Bonus	0	0	0	0	0	0	
Budget:	15,200	23,026	8,400	6,596	1,400	54,622	52,045
Expended:	600	3,560	2,160	4,320	680	11,320	
1002 - Balance Other Personnel Costs	14,600	19,466	6,240	2,276	720	43,302	79%
Professional Fees and Services:							
7245- Financial & Accounting Services	0	0	0	0	0	0	
7253- Other Professional Fees (EAP)	0	0	0	0	0	0	
7274- Temporary Employment Agencies	0	0	0	0	0	0	
7275- Computer Programming Services	0	0	0	0	0	0	
Budget:	0	0	0	0	0	0	0
Expended:	0	0	0	0	0	0	
2001 - Balance Professional Fees and Services	0	0	0	0	0	0	#DIV/0!
Budget:	500	2,500	2,000	8,191	1,000	14,191	0
Expended:	849	477	4,000	1,493	0	6,819	
2003 - (7300) Balance Consumable Supplies:	(349)	2,023	(2,000)	6,698	1,000	7,372	52%
Utilities:							
7501- Electricity	0	0	0	0	0	0	
7503- Telecommunications-Long Distance	0	0	0	0	0	0	
7504- Telecommunications-Monthly Charge	2,512	1,514	0	0	0	4,026	
7514- Telecommunications-Maint & Repair	0	0	0	0	0	0	
7516- Telecommunications-Other Charges (reg voice/inte)	0	4,526	0	0	0	4,526	
7517- Telecommunications Equipment-Expensed	0	0	0	0	0	0	
Budget:	22,533	2,700	0	0	0	25,233	0
Expended:	2,512	6,040	0	0	0	8,552	
2004 - Balance Utilities:	20,021	(3,340)	0	0	0	16,681	66%
Travel:							
7101- Travel I/S - Public Transportation Fares	0	1,464	0	2,246	0	3,710	
7102- Mileage	0	3,523	0	332	0	3,855	
7104- Travel I/S - Actual Expense Overnight	0	0	0	0	0	0	
7105- Travel I/S - Incidental Expenses	0	592	0	921	0	1,513	
7106- Travel I/S - Meals & Lodging	0	4,085	0	2,024	0	6,109	
7107- Travel I/S - Non-Overnight Travel (Meals)	0	117	0	0	0	117	
7110- Travel I/S - Board Member Meals & Lodging	0	0	0	0	0	0	
7111- Travel OOS - Public Transportation Fares	0	0	0	0	0	0	
7112- Travel OOS - Mileage	0	0	0	0	0	0	
7115- Travel OOS - Incidental Expenses	0	0	0	0	0	0	
7116- Travel OOS - Meals, Lodging Allowable	0	0	0	100	0	100	
7135- Travel I/S - State Occupancy Tax	0	36	0	48	0	84	
Budget:	0	49,752	912	20,812	500	71,976	0
Expended:	0	9,818	0	5,671	0	15,488	
2005 - Balance Travel:	0	39,934	912	15,141	500	56,488	78%
7462- Rent office space - building		890				890	
Budget:	2,136	0	0	0	0	2,136	0
Expended:	0	890	0	0	0	890	
2006 - (7470) Balance Rent - Building (storage):	2,136	(890)	0	0	0	1,246	58%

Texas Commission on Fire Protection

Fiscal Year 2011 - Operating Budget

Thru: February 28, 2011

Goal B: Fire Department Standards

	Mgmt	Complnc	Cert	Testing	Curr Dev	Total	%
Rent - Machine and Other:							
7406- Rental - Furnishings & Equipment (copier)	3,197	0	0	0	0	3,197	
7411- Rental - Computer Equipment	791	0	0	0	0	791	
Budget:	14,100	0	0	0	0	14,100	0
Expended:	3,988	0	0	0	0	3,988	
2007 - Balance Rent - Machine and Other:	10,112	0	0	0	0	10,112	72%

Other Operating Expense:							
7201- Membership Dues	0	0	0	0	0	0	
7203- Registration Fees-Employee Training	171	250	250	0	0	671	
7210- Fees & Other Charges (DPS)	0	0	2	0	0	2	
7211- Awards	0	88	0	386	0	474	
7216- Insurance Premiums - appvd by oag	0	250	0	0	0	250	
7262- Maint & Repair - Computer Software	0	0	0	0	0	0	
7267- Maint & Repair - Computer Equipment	0	0	0	813	0	813	
7273- Reproduction & Printing	0	0	0	1,482	0	1,482	
7276- Communication Services (T-1 Line)	862	0	0	0	0	862	
7281- Advertising Services	0	0	0	0	0	0	
7286- Freight & Delivery Services	0	0	0	2,067	0	2,067	
7291- Postage & Postal Services	8,767	0	0	0	0	8,767	
7299- Purchased Contracted Services	93	0	18	0	0	111	
7303- Subscriptions, Periodicals and Info Services	0	0	0	0	0	0	
7312- Medical Supplies	0	0	0	0	0	0	
7330- Parts -equip, furn	0	0	0	0	0	0	
7334- Furnishings & Equipment -Expensed	0	0	0	0	0	0	
7335- Parts -Computer Equipment - Expensed	0	0	0	0	0	0	
7354- Bldg Remodel - State Leased -Expensed	0	0	0	0	0	0	
7367- Personal Property - Maint & Repair	0	0	0	0	0	0	
7374- Personal Property-Furn & Equip - Controlled	0	0	0	0	0	0	
7377- Computer Equipment - Expensed	0	0	0	0	0	0	
7378- Computer Equipment - Controlled	0	135	157	0	0	292	
7379- Computer Equipment - Cap (>1,000)	0	0	0	0	0	0	
7380- Computer Software - Expensed	0	0	0	99	0	99	
7382- Books - Expensed	0	0	0	0	0	0	
7806- Interest on Delayed Payment	0	2	0	2	0	5	
7947- Workers Compensation Transfer (SORM)	0	0	0	0	0	0	
7953- SWCAP payment/cost allocation	0	0	0	0	0	0	
7961- STS Transfers-Telecommunications (TexAn)	426	0	0	0	0	426	
Budget:	115,830	7,100	4,100	5,100	1,100	133,230	0
Expended:	10,319	725	427	4,850	0	16,321	
2009 - Balance Other Operating Expense:	105,511	6,375	3,673	250	1,100	116,909	88%

Capital Expenditures:							
7312- Medical Supplies	0	0	0	0	0	0	
7354- Remodeling of Bldg-State Owned - Capitalized	0	0	0	0	0	0	
7389- Books, Pre-Recorded Ref Material - Capitalized	0	0	0	0	0	0	
Budget:	0	0	0	0	0	0	0
Expended:	0	0	0	0	0	0	

5000 - Balance Capital Expenditures:	0	0	0	0	0	0	#DIV/0!
Budget:	261,841	519,003	241,202	312,698	94,456	1,429,200	0
Expended:	64,039	234,606	101,482	168,627	45,908	614,663	
TOTAL BALANCE	197,802	284,396	139,720	144,071	48,548	814,538	57%

Current Costs for Performance Measures: salaries, travel, consumables:

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
4006 - Certification	52,528	48,527	0	0	101,055
4007 - Testing	84,829	78,949	0	0	163,778

Texas Commission on Fire Protection
Fiscal Year 2011 - Operating Budget

Thru: February 28, 2011

Goal C: Indirect Administration

	Exec Office	Supp Svcs	Commis	Total	%	
	Budget:	418,005	314,458	0	732,462	-25,457
	Expended:	192,220	157,229	0	349,449	
1001 - Balance Salaries & Wages:	225,784	157,229	0	383,013	52%	
Other Personnel Costs:						
7004- Non-Permanent Full-Time Employee	2,432	0	0	2,432		
7017- One-Time Merit	0	0	0	0		
7022- Longevity Pay	2,740	5,880	0	8,620		
7023- Lump Sum Termination	0	0	0	0		
7030- Employee Incentive Bonus	0	0	0	0		
	Budget:	25,496	19,940	0	45,436	25,457
	Expended:	5,172	5,880	0	11,052	
1002 - Balance Other Personnel Costs	20,324	14,060	0	34,384	76%	
Professional Fees and Services:						
7245- Financial & Accounting Services	0	0	0	0		
7253- Other Professional Fees (EAP)	0	0	0	0		
7274- Temporary Employment Agencies	0	0	0	0		
7275- Computer Programming Services	0	0	0	0		
	Budget:	0	9,072	0	9,072	0
	Expended:	0	0	0	0	
2001 - Balance Professional Fees and Services:	0	9,072	0	9,072	100%	
	Budget:	600	1790	0	2,390	0
	Expended:	248	472	0	721	
2003 - (7300) Balance Consumable Supplies:	352	1,318	0	1,669	70%	
Utilities:						
7501- Electricity	0	0	0	0		
7503- Telecommunications-Long Distance	0	0	0	0		
7504- Telecommunications-Monthly Charge	0	1,353	0	1,353		
7514- Telecommunications-Maint & Repair	0	0	0	0		
7516- Telecommunications-Other Charges (reg voice/internet)	0	0	0	0		
7517- Telecommunications equipment - Expensed	0	0	0	0		
	Budget:	0	4788	0	4,788	0
	Expended:	0	1,353	0	1,353	
2004 - Balance Utilities:	0	3,435	0	3,435	72%	
Travel:						
7101- Travel I/S - Public Transportation Fares	0	0	1,776	1,776		
7102- Mileage	0	203	1,920	2,123		
7104- Travel I/S - Actual Expense Overnight	0	0	0	0		
7105- Travel I/S - Incidental Expenses	0	0	115	115		
7106- Travel I/S - Meals & Lodging	0	0	0	0		
7107- Travel I/S - Non-Overnight Travel (Meals)	0	0	0	0		
7110- Travel I/S - Board Member Meals & Lodging	0	0	776	776		
7111- Travel OOS - Public Transportation Fares	0	0	0	0		
7112- Travel OOS - Mileage	0	0	0	0		
7115- Travel OOS - Incidental Expenses	0	0	0	0		
7116- Travel OOS - Meals, Lodging Allowable	0	0	0	0		
7135- Travel I/S - State Occupancy Tax	0	0	13	13		
	Budget:	2,000	2,000	15,524	19,524	0.00
	Expended:	0	203	4,601	4,803	
2005 - Balance Travel:	2,000	1,798	10,923	14,721	75%	
	Budget:	0	1,188	0	1,188	0
	Expended:	180	414	0	594	
2006 - (7470) Balance Rent - Building (storage):	(180)	774	0	594	50%	

Texas Commission on Fire Protection
Fiscal Year 2011 - Operating Budget

Thru: February 28, 2011

Goal C: Indirect Administration

	<u>Exec Office</u>	<u>Supp Svcs</u>	<u>Commis</u>	<u>Total</u>	<u>%</u>
Rent - Machine and Other:					
7406- Rental - Furnishings & Equipment (copier)	0	1,721	0	1,721	
7411- Rental - Computer Equipment	0	365	0	365	
Budget:	2,000	5,700	0	7,700	0
Expended:	0	2,087	0	2,087	
2007 - Balance Rent - Machine and Other:	2,000	3,613	0	5,613	73%
Other Operating Expense:					
7201- Membership Dues	0	0	0	0	
7203- Registration Fees-Employee Training	380	92	0	472	
7210- Fees & Other Charges (DPS)	0	0	0	0	
7211- Awards	193	0	0	193	
7216- Insurance Premiums - appvd by oag	0	0	0	0	
7262- Maint & Repair - Computer Software	0	0	0	0	
7267- Maint & Repair - Computer Equipment	-2,000	0	0	-2,000	
7273- Reproduction & Printing	0	40	0	40	
7276- Communication Services (T-1 Line)	2,000	464	0	2,464	
7281- Advertising Services	0	0	0	0	
7286- Freight & Delivery Services	0	0	0	0	
7291- Postage & Postal Services	0	4,721	0	4,721	
7299- Purchased Contracted Services	269	21	0	290	
7303- Subscriptions, Periodicals and Info Services	0	0	0	0	
7312- Medical Supplies	0	0	0	0	
7330- Parts -equip, furn	0	0	0	0	
7334- Furnishings & Equipment -Expensed	0	0	0	0	
7335- Parts -Computer Equipment - Expensed	0	0	0	0	
7354- Bldg Remodel - State Leased -Expensed	0	0	0	0	
7367- Personal Property - Maint & Repair	0	0	0	0	
7374- Personal Property-Furn & Equip - Controlled	0	0	0	0	
7377- Computer Equipment - Expensed	0	0	0	0	
7378- Computer Equipment - Controlled	0	0	0	0	
7379- Computer Equipment - Cap (>1,000)	0	0	0	0	
7380- Computer Software - Expensed	0	0	0	0	
7382- Books - Expensed	0	0	0	0	
7806- Interest on Delayed Payment	0	0	10	10	
7947- Workers Compensation Transfer (SORM)	0	2,170	0	2,170	
7953- SWCAP payment/cost allocation	0	749	0	749	
7961- STS Transfers-Telecommunications (TexAn)	0	230	0	230	
Budget:	5,599	22,027	0	27,626	0
Expended:	842	8,486	10	9,338	
2009 - Balance Other Operating Expense:	4,757	13,541	(10)	18,288	66%
Capital Expenditures:					
7312- Medical Supplies	0	0	0	0	
7354- Remodeling of Bldg-State Owned - Capitalized	0	0	0	0	
7389- Books, Pre-Recorded Ref Material - Capitalized	183	0	0	183	
Budget:	0	0	0	0	0
Expended:	183	0	0	183	
5000 - Balance Capital Expenditures:	(183)	0	0	(183)	#DIV/0!
Budget:	453,700	380,963	15,524	850,186	0
Expended:	198,846	176,122	4,611	379,579	
TOTAL - BALANCE	254,854	204,840	10,913	470,607	55%

- 4. Reports from the Budget and Strategic Plan subcommittees with discussion and possible action relating to any recommendations developed by these subcommittees.**

5. **Reports from fire service interest groups and agencies on matters relating to organizational purposes, functions, and objectives, including, but not limited to, the Texas Fire Chiefs Association, the Texas State Association of Fire Fighters, the State Firemen's and Fire Marshals' Association of Texas, the Texas Association of Fire Educators, the Texas Forest Service, the National Fire Protection Association, and the State Fire Marshal's Office.**

- 6. Discussion and possible action concerning reports by the Commission representative to the Texas Fire School Advisory Board and by representatives of the Texas Engineering Extension Service (TEEX) regarding fire protection training provided by TEEX through its Emergency Services Training Institute (ESTI).**

7. New matters from the commission, staff, or public regarding rulemaking which may be discussed in future Commission meetings.

8. Discussion and possible action on future meeting dates.

- 9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including but not limited to:**
 - A. Discussion and possible final adoption on proposed amendments, new sections, repeals, and rule reviews as follows:**
 - 1. Proposed amendments to 37 TAC, Chapter 401, Practice and Procedure, including, but not limited to §401.1(b) (3), Purpose and Scope.**

Chapter 401
PRACTICE AND PROCEDURE
Subchapter A
GENERAL PROVISIONS AND DEFINITIONS

§401.1. Purpose and Scope.

- (a) Purpose. The purpose of this chapter is to provide a system of procedures for practice before the Texas Commission on Fire Protection that will promote the just and efficient disposition of proceedings and public participation in the decision-making process. The provisions of this chapter shall be given a fair and impartial construction to attain these objectives.
- (b) Scope.
- (1) This chapter shall govern the initiation, conduct, and determination of proceedings required or permitted by law in matters regulated by the commission, whether instituted by order of the commission or by the filing of an application, complaint, petition, or any other pleading.
- (2) This chapter shall not be construed so as to enlarge, diminish, modify, or otherwise alter the jurisdiction, powers, or authority of the commission, its staff, or the substantive rights of any person.
- ~~(3) This chapter shall not apply to applications or proceedings concerning Fire Department Emergency Program funds which are governed by Chapter 461 of this title (relating to General Administration), Chapter 463 of this title (relating to Application Criteria), and Chapter 465 of this title (relating to Equipment, Facilities, and Training Standards).]~~
- (3)**(4) This chapter shall not apply to matters related solely to the internal personnel rules and practices of this agency.
- (4)**(5) To the extent that any provision of this chapter is in conflict with any statute or substantive rule of the commission, the statute or substantive rule shall control.
- (5)**(6) In matters referred to the State Office of Administrative Hearings (SOAH), hearings or other proceedings are governed by 1 TAC Chapter 155 (relating to Rules of Procedures) adopted by SOAH effective January 2, 1998. To the extent that any provision of this chapter is in conflict with SOAH Rules of Procedures, the SOAH rules shall control.

§401.3. Definitions.

The following terms, when used in this chapter, shall have the following meanings, unless the context or specific language of a section clearly indicates otherwise:

- (1) Advisory Committee--An advisory committee that is required to assist the commission in its rule-making function and whose members are appointed by the commission pursuant to Government Code, §419.008, or other law.
- (2) Agency--Includes the commission, the executive director, and all divisions, departments, and employees thereof.

- (3) APA--Government Code, Chapter 2001, The Administrative Procedure Act, as it may be amended from time to time.
- (4) Applicant--A person, including the commission staff, who seeks action from the commission by written application, petition, complaint, notice of intent, appeal, or other pleading that initiates a proceeding.
- (5) Application--A written request seeking a license from the commission, petition, complaint, notice of intent, appeal, or other pleading that initiates a proceeding.
- (6) Authorized Representative--A person who enters an appearance on behalf of a party, or on behalf of a person seeking to be a party or otherwise to participate in a commission proceeding.
- (7) Chairman--The commissioner who serves as presiding officer of the commission pursuant to Government Code, §419.007.
- (8) Commission--The Texas Commission on Fire Protection.
- (9) Commissioner--One of the appointed members of the decision-making body defined as the commission.
- (10) Complainant--Any person, including the commission's legal staff, who files a signed written complaint intended to initiate a proceeding with the commission regarding any act or omission by a person subject to the commission's jurisdiction.
- (11) Contested Case--A proceeding, including but not restricted to, the issuance of certificates, licenses, registrations, permits, etc., in which the legal rights, duties, or privileges of a party are to be determined by the agency after an opportunity for adjudicative hearing.
- (12) Days--Calendar days, not working days, unless otherwise specified in this chapter or in the commission's substantive rules.
- (13) Division--An administrative unit for regulation of specific activities within the commission's jurisdiction.
- (14) Executive Director--The executive director appointed by the commission pursuant to Government Code, §419.009.
- (15) Hearings Officer--An administrative law judge on the staff of the State Office of Administrative Hearings assigned to conduct a hearing and to issue a proposal for decision, including findings of fact and conclusions of law, in a contested case pursuant to Government Code, Chapter 2003.
- (16) License--Includes the whole or part of any agency permit, certificate, approval, registration, license, or similar form of permission required or permitted by law.
- (17) Licensee--A person who holds an agency permit, certificate, approval, registration, license, or similar form of permission required or permitted by law.
- (18) Licensing--Includes the agency process respecting the granting, denial, renewal, revocation, suspension, annulment, withdrawal, or amendment of a license.
- (19) Party--Each person or agency named or admitted as a party in a contested case.
- (20) Person--Any individual, partnership, corporation, association, governmental subdivision, or public or private organization of any character other than the commission.
- (21) Pleading--A written document submitted by a party, or a person seeking to participate in a proceeding, setting forth allegations of fact, claims, requests for relief, legal argument, and/or other matters relating to a commission proceeding.

- (22) Presiding Officer--The chairman, the acting chairman, the executive director, or a duly authorized hearings officer.
- (23) Proceeding--Any hearing, investigation, inquiry, or other fact-finding or decision-making procedure, including the denial of relief or the dismissal of a complaint.
- (24) Respondent--A person under the commission's jurisdiction against whom any complaint or appeal has been filed or who is under formal investigation by the commission.

§401.5. Delegation of Authority.

All decisions to suspend, revoke, or deny an application for any certificate or approval, to reprimand or place on probation the holder of such certificate or approval, or to impose an order for restitution, remedial action, or administrative penalties pursuant to Government Code, Chapter 419, shall be made by the executive director.

§401.7. Construction.

- (a) A provision of a rule referring to the commission, the executive director, or a provision referring to the presiding officer, is construed to apply to the commission or chairman if the matter is within the jurisdiction of the commission, to the executive director if the matter is within the jurisdiction of the executive director.
- (b) Unless otherwise provided by law, any duty imposed on the commission, the chairman, or the executive director may be delegated to a duly authorized representative. In such case, the provisions of any rule referring to the commission, the chairman, or the executive director, shall be construed to also apply to the duly authorized representative of the commission, the chairman, or the executive director.

§401.9. Records of Official Action.

All official acts of the commission or the executive director shall be evidenced by a recorded or written record. Official action of the commission or the executive director shall not be bound or prejudiced by any informal statement or opinion made by any member of the commission, the executive director, or the employees of the agency.

§401.11. Conduct of Commission and Advisory Meetings.

- (a) Statements concerning items which are part of the commission's posted agenda. Persons who desire to make presentations to the commission concerning matters on the agenda for a scheduled commission meeting or advisory committee meeting shall complete registration cards which shall be made available at the entry to the place where the commission's scheduled meeting is to be held. The registration cards shall include blanks in which all of the following information must be disclosed:
 - (1) name of the person making a presentation;
 - (2) a statement as to whether the person is being reimbursed for the presentation; and if so, the name of the person or entity on whose behalf the presentation is made;
 - (3) a statement as to whether the presenter has registered as a lobbyist in relationship to the matter in question;
 - (4) a reference to the agenda item which the person wishes to discuss before the commission;
 - (5) an indication as to whether the presenter wishes to speak for or against the proposed agenda item; and

- (6) a statement verifying that all factual information to be presented shall be true and correct to the best of the knowledge of the speaker.
- (b) Discretion of the presiding officer. The presiding officer of the commission or the advisory committee, as the case may be, shall have discretion to employ any generally recognized system of parliamentary procedures, including, but not limited to Robert's Rules of Order for the conduct of commission or committee meetings, to the extent that such parliamentary procedures are consistent with the Texas Open Meetings Act or other applicable law and these rules. The presiding officer shall also have discretion in setting reasonable limits on the time to be allocated for each matter on the agenda of a scheduled commission meeting or advisory committee meeting and for each presentation on a particular agenda item. If several persons wish to address the commission or advisory committee on the same agenda item, it shall be within the discretion of the chair to request that persons who wish to address the same side of the issue coordinate their comments, or limit their comments to an expression in favor of views previously articulated by persons speaking on the same side of an issue.
- (c) Requests that issues be placed on an agenda for discussion. Persons who wish to bring issues before the commission shall first address their request to the General Counsel and Executive Director, Texas Commission on Fire Protection, P.O. Box 2286, Austin, Texas 78768-2286. Such requests should be submitted at least 30 days in advance of commission meetings, but in no event less than 15 days. The decision whether to place a matter on an agenda for discussion before the full commission, or alternatively before a commission advisory committee, or with designated staff members, shall be within the discretion of the appropriate presiding officer.

§401.13. Computation of Time.

- (a) Computing Time. In computing any period of time prescribed or allowed by these rules, by order of the Agency, or by any applicable statute, the period shall begin on the day after the act, event, or default in controversy and conclude on the last day of such computed period, unless it be a Saturday, Sunday, or a legal holiday, in which event, the period runs until the end of the next day which is neither a Saturday, Sunday, nor a legal holiday. A party or attorney of record notified by mail under §401.61 of this title (relating to Record) is deemed to have been notified on the date on which notice is mailed.
- (b) Extensions. Unless otherwise provided by statute, the time for filing any pleading, except a notice of protest, may be extended by order of the director, upon the following conditions:
 - (1) A written motion must be duly filed with the director prior to the expiration of the applicable period of time allowed for such filings.
 - (2) The written motion must show good cause for such extension and that the need is not caused by the neglect, indifference, or lack of diligence on the part of the movant.
 - (3) A copy of any such motion shall be served upon all other parties of record to the proceeding contemporaneously with the filing thereof.

§401.15. Agreements To Be in Writing.

- (a) Unless precluded by law, informal disposition may be made of any contested case by stipulation, agreed settlement, consent order, or default.
- (b) No stipulation or agreement between the parties, their attorneys or representatives, with regard to any matter involved in any proceeding before the Agency, shall be enforced unless it shall have been reduced to writing and signed by the parties or their authorized representatives, or unless it shall have been dictated into the record by them during the course of a hearing, or incorporated in an order bearing their written approval. This rule does not limit a party's ability to waive, modify, or stipulate any right or privilege afforded by these rules, unless precluded by law.

- 9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including but not limited to:**
 - A. Discussion and possible final adoption on proposed amendments, new sections, repeals, and rule reviews as follows:**
 - 2. Proposed amendments to 37 TAC, Chapter 423, Fire Suppression, including, but not limited to §423.3(a)(2)(B) Minimum Standards for Basic Structure Fire Protection Personnel Certification; §423.201(b) Minimum Standards for Aircraft Rescue Fire Fighting Personnel.**

CHAPTER 423
FIRE SUPPRESSION
SUBCHAPTER A

MINIMUM STANDARDS FOR STRUCTURE FIRE PROTECTION PERSONNEL CERTIFICATION

§423.1. MINIMUM STANDARDS FOR STRUCTURE FIRE PROTECTION PERSONNEL.

- (a) Fire protection personnel of any local government entity, who receive probationary or temporary appointment to structure fire protection duties, must be certified by the Commission within one year from the date of their appointment in a structural fire protection personnel position.
- (b) Prior to being appointed to fire suppression duties or certified as fire protection personnel, the Commission must review and approve the applicants fingerprint based criminal history record information obtained from the Department of Public Safety and the Federal Bureau of Investigation. The individual or fire department must follow the procedure established by the Department of Public Safety to initiate and complete the electronic fingerprint process. The results will be available to the Commission through the Department of Public Safety's data base. The Commission will follow the criteria established in Title 37 Chapter 403 of the Texas Administrative Code (TAC) for denying a person certification based on the results of the fingerprint based criminal history record check.
- (c) Prior to being appointed to fire suppression duties, personnel must complete a Commission-approved basic structure fire suppression program and successfully complete a Commission recognized emergency medical course. The individual must successfully pass the Commission examination pertaining to that curriculum as required by §423.3 of this title. The Commission recognizes the following emergency medical training:
 - (1) Department of State Health Services Emergency Medical Service Personnel certification training;
 - (2) an American Red Cross Emergency Response course, including the optional lessons and enrichment sections;
 - (3) an American Safety and Health Institute First Responder course;
 - (4) National Registry of Emergency Medical Technicians certification; or
 - (5) medical training deemed equivalent by the Commission.
- (d) Personnel holding any level of structure fire protection personnel certification must comply with the continuing education requirements specified in §441.7 of this title (relating to Continuing Education for Structure Fire Protection Personnel).

§423.3. Minimum Standards for Basic Structure Fire Protection Personnel Certification.

- (a) In order to become certified as basic structure fire protection personnel, an individual must:
 - (1) possess valid documentation of accreditation from the International Fire Service Accreditation Congress as a Fire Fighter I, Fire Fighter II, Hazardous Materials Awareness Level Personnel; and

- (A) Hazardous Materials Operations Level Responders including the Mission-Specific Competencies for Personal Protective Equipment and Product Control under the current edition; or
 - (B) NFPA 472 Hazardous Materials Operations prior to the 2008 edition; and
 - (C) must meet the medical requirements outlined in §423.1(b) of this title; or
- (2) complete a Commission-approved basic structure fire suppression program, meet the medical requirements outlined in §423.1(b), and successfully pass the Commission examination(s) as specified in Chapter 439 of this title (relating to Examinations for Certification). An approved basic structure fire suppression program shall consist of one or any combination of the following:
- (A) completion of a Commission-approved Basic Fire Suppression Curriculum, as specified in Chapter 1 of the Commission's Certification Curriculum Manual; or
 - ~~[(B) completion of the five phase levels of the approved Basic Fire Suppression Curriculum, as specified in Chapter 1 of the Commission's Certification Curriculum Manual; or]~~
 - ~~(B)(C)~~ completion of an out-of-state, and/or military training program deemed equivalent to the Commission-approved Basic Fire Suppression Curriculum; or
 - ~~(C)(D)~~ documentation of the receipt of an advanced certificate or training records from the State Firemen's and Fire Marshals' Association of Texas, that is deemed equivalent to a Commission-approved Basic Fire Suppression Curriculum.
- (b) A basic fire suppression program may be submitted to the Commission for approval by another jurisdiction as required in Texas Government Code, §419.032(d), Appointment of Fire Protection Personnel. These programs include out-of-state and military programs, and shall be deemed equivalent by the Commission if the subjects taught, subject content, and total hours of training meet or exceed those contained in Chapter 1 of the Commission's Certification Curriculum Manual.

§423.5. Minimum Standards for Intermediate Structure Fire Protection Personnel Certification.

- (a) Applicants for Intermediate Structure Fire Protection Personnel Certification must complete the following requirements:
- (1) hold, as a prerequisite, a Basic Structure Fire Protection Personnel Certification as defined in §423.3 of this title (relating to Minimum Standards for Basic Structure Fire Protection Personnel Certification); and
 - (2) acquire a minimum of four years of fire protection experience and complete the training listed in one of the following options:
 - (A) Option 1--Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the Commission that the courses comply with subsections (b) and (c) of this section; or
 - (B) Option 2--Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List course and four B-List courses. (See the exception outlined in subsection (c) of this section); or

- (C) Option 3--Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1, with either one A-List course or four B-List courses (See the exception outlined in subsection (c) of this section).
- (b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the Commission's Certification Curriculum Manual or for experience in fire service, may not be counted toward this level of certification.
- (c) The training required in this section must be in addition to any training used to qualify for any lower level of Structure Fire Protection Personnel Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.

§423.7. Minimum Standards for Advanced Structure Fire Protection Personnel Certification.

- (a) Applicants for Advanced Structure Fire Protection Personnel certification must complete the following requirements:
 - (1) hold as a prerequisite an Intermediate Structure Fire Protection Personnel Certification as defined in §423.5 of this title (relating to Minimum Standards for Intermediate Structure Fire Protection Personnel Certification); and
 - (2) acquire a minimum of eight years of fire protection experience and complete the training listed in one of the following options:
 - (A) Option 1--Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or
 - (B) Option 2—Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List course and four B-List courses. (See the exception outlined in subsection (c) of this section); or
 - (C) Option 3—Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses (See the exception outlined in subsection (c) of this section).
- (b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.
- (c) The training required in this section must be in addition to any training used to qualify for any lower level of Structure Fire Protection Personnel Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.

§423.9. Minimum Standards for Master Structure Fire Protection Personnel Certification.

- (a) Applicants for Master Structure Fire Protection Personnel Certification must complete the following requirements:
 - (1) hold as a prerequisite an Advanced Structure Fire Protection Personnel Certification as defined in

§423.7 of this title (relating to Minimum Standards for Advanced Structure Fire Protection Personnel Certification); and

- (2) acquire a minimum of twelve years of fire protection experience, and 60 college semester hours or an associate degree, which includes at least 18 college semester hours in fire science subjects.
- (b) College level courses from both the upper and lower division may be used to satisfy the education requirement for Master Structure Fire Protection Personnel Certification

§423.11. Higher Levels of Certification.

- (a) An individual may receive higher levels of certification in structural fire protection while being assigned to another discipline, provided that all requirements for the higher level or levels of certification are met.
- (b) Repetitive training cannot be used toward higher levels of certification.

§423.13. International Fire Service Accreditation Congress (IFSAC) Seal.

- (a) Individuals holding a current Commission Structure Fire Protection Personnel certification received prior to March 10, 2003, may be granted International Fire Service Accreditation Congress (IFSAC) seals for Hazardous Materials Awareness Level Personnel, Hazardous Materials Operations Level Responders, Fire Fighter I, and Fire Fighter II by making application to the Commission for the IFSAC seals and paying applicable fees.
- (b) Individuals completing a Commission-approved basic fire suppression program, meeting any other NFPA requirement, and passing the applicable examination(s) based on the basic fire suppression curriculum, may be granted IFSAC seal(s) for Hazardous Materials Awareness Level Personnel, Hazardous Materials Operations Level Responders (including the Mission-Specific Competencies for Personal Protective Equipment and Product Control), Fire Fighter I, and/or Fire Fighter II by making application to the Commission for the IFSAC seal(s) and paying applicable fees, provided they meet the following provisions:
 - (1) To receive the IFSAC Hazardous Materials Awareness Level Personnel seal, the individual must:
 - (A) complete the Hazardous Materials Awareness section of a Commission approved course; and
 - (B) pass the Hazardous Materials Awareness section of a Commission examination.
 - (2) To receive the IFSAC Hazardous Materials Operations Level Responders seal (including the Mission-Specific Competencies for Personal Protective Equipment and Product Control) the individual must:
 - (A) complete the Hazardous Materials Operation section of a Commission-approved course;
 - (B) document possession of an IFSAC Hazardous Materials Awareness Level Personnel seal; and

- (C) pass the Hazardous Materials Operations section of a Commission examination.
- (3) To receive the IFSAC Fire Fighter I seal, the individual must:
 - (A) complete a Commission-approved Fire Fighter I course;
 - (B) provide medical documentation as outlined in subsection (c) of this section;
 - (C) document possession of an IFSAC Hazardous Materials Awareness Level Personnel seal; and
 - (D) document possession of an IFSAC Hazardous Materials Operations Level Responders seal; and
 - (E) pass the Fire Fighter I section of a Commission examination.
 - (4) To receive the IFSAC Fire Fighter II seal, the individual must:
 - (A) complete a Commission-approved Fire Fighter II course;
 - (B) document possession of an IFSAC Fire Fighter I seal; and
 - (C) pass the Fire Fighter II section of a Commission examination.
- (c) In order to meet the medical requirements of NFPA 1001, the individual must document successful completion of an emergency medical training course or program. The Commission recognizes the following emergency medical training:
- (1) The Texas Department of State Health Services Emergency Medical Service Personnel certification training;
 - (2) American Red Cross Response course (including optional lessons and enrichment sections);
 - (3) American Safety and Health Institute First Responder course;
 - (4) National Registry of Emergency Medical Technicians certification; or
 - (5) medical training deemed equivalent by the Commission.

SUBCHAPTER B

MINIMUM STANDARDS FOR AIRCRAFT RESCUE FIRE FIGHTING PERSONNEL

§423.201. Minimum Standards for Aircraft Rescue Fire Fighting Personnel.

- (a) Aircraft rescue fire fighting personnel are employees of a local governmental entity who are appointed to aircraft rescue firefighting duties. These duties may include fighting aircraft fires at airports, standing by for potential crash landings, and performing aircraft rescue and fire fighting duties.
- (b) Personnel appointed as ~~for~~Aircraft Rescue Fire Fighting Personnel must be certified to at least the basic level by the Commission within one year from their employment in an ~~for~~ Aircraft Rescue Fire Fighting Personnel position.
- (c) Prior to being appointed to aircraft rescue fire suppression duties, all personnel must:
 - (1) successfully complete a Commission-approved basic fire suppression course and pass the Commission's examination pertaining to that curriculum; and
 - (2) successfully complete a Commission-approved basic aircraft rescue fire protection course and pass the Commission's examination pertaining to that curriculum.
- (d) "Stand by" means the act of responding to a designated position in the movement area on the airfield at which initial response fire and rescue units will await the arrival of an aircraft experiencing an announced emergency.
- (e) "Movement area" is comprised of all runways, taxiways, and other areas of the airport which are used for taxiing or hover taxiing, take-off, and landing of aircraft, exclusive of loading ramps and aircraft parking areas.
- (f) Personnel holding any level of aircraft rescue fire fighting personnel certification shall be required to comply with the continuing education specified in §441.9 of this title (relating to Continuing Education for Aircraft Rescue Fire Fighting Personnel).
- (g) Aircraft rescue fire fighting personnel that perform structure fire fighting duties must be certified, as a minimum, as basic structural fire protection personnel.

§423.203. Minimum Standards for Basic Aircraft Rescue Fire Fighting Personnel Certification.

In order to obtain a Basic Aircraft Rescue Fire Fighting Personnel Certification the individual must:

- (1) hold a Basic Structure Fire Protection Personnel Certification; and
- (2) possess valid documentation of accreditation from the International Fire Service Accreditation Congress as an Airport Fire Fighter; or
- (3) complete a Commission-approved aircraft rescue fire suppression training program and successfully pass the Commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification). An approved aircraft rescue fire suppression training program shall consist of one of the following:

- (A) a Commission-approved Basic Aircraft Rescue Fire Suppression Curriculum as specified in Chapter 2 of the Commission's Certification Curriculum Manual.
- (B) an out-of-state, and/or military training program that has been submitted to the Commission for evaluation and found to be equivalent to or exceeds the Commission-approved Basic Aircraft Rescue Fire Suppression Curriculum.

§423.205. Minimum Standards for Intermediate Aircraft Rescue Fire Fighting Personnel Certification.

- (a) Applicants for Intermediate Aircraft Rescue Fire Fighting Personnel Certification must complete the following requirements:
 - (1) hold as a prerequisite a Basic Aircraft Rescue Fire Fighting Personnel Certification as defined in §423.203 of this title (relating to Minimum Standards for Basic Aircraft Rescue Fire Fighting Personnel Certification); and
 - (2) acquire a minimum of four years of fire protection experience and complete the training listed in one of the following options:
 - (A) Option 1--Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or
 - (B) Option 2—Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List course and four B-List courses. (See the exception outlined in subsection (c) of this section); or
 - (C) Option 3—Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses (See the exception outlined in subsection (c) of this section).
- (b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.
- (c) The training required in this section must be in addition to any training used to qualify for any lower level of Aircraft Rescue Fire Fighting Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.

§423.207. Minimum Standards for Advanced Aircraft Rescue Fire Fighting Personnel Certification.

- (a) Applicants for Advanced Aircraft Rescue Fire Fighting Personnel certification must complete the following requirements:

- (1) hold as a prerequisite an Intermediate Aircraft Rescue Fire Fighting Personnel Certification as defined in §423.205 of this title (relating to Minimum Standards for Intermediate Aircraft Rescue Fire Fighting Personnel Certification); and
- (2) acquire a minimum of eight years of fire protection experience and complete the training listed in one of the following options:
 - (A) Option 1--Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or
 - (B) Option 2—Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List course and four B-List courses. (See the exception outlined in subsection (c) of this section); or
 - (C) Option 3—Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses (See the exception outlined in subsection (c) of this section).
- (b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.
- (c) The training required in this section must be in addition to any training used to qualify for any lower level of Aircraft Rescue Fire Fighting Personnel Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.

§423.209. Minimum Standards for Master Aircraft Rescue Fire Fighting Personnel Certification.

- (a) Applicants for Master Aircraft Rescue Fire Fighting Personnel Certification must complete the following requirements:
 - (1) hold, as a prerequisite, an Advanced Aircraft Rescue Fire Fighting Personnel Certification as defined in §423.207 of this title (relating to Minimum Standards for Advanced Aircraft Rescue Fire Fighting Personnel Certification); and
 - (2) acquire a minimum of twelve years of fire protection experience, and 60 college semester hours or an associate's degree, which includes at least 18 college semester hours in fire science subjects.
- (b) College level courses from both the upper and lower division may be used to satisfy the education requirement for Master Aircraft Rescue Fire Fighting Personnel Certification.

§423.211. International Fire Service Accreditation Congress (IFSAC) Seal.

- (a) Individuals holding a current commission Aircraft Rescue Fire Fighting Personnel certification received prior to March 10, 2003, may be granted an International Fire Service Accreditation Congress (IFSAC) seal as an Airport Fire Fighter by making application to

the commission for the IFSAC seal and paying applicable fees.

- (b) Individuals completing a commission-approved basic aircraft rescue fire suppression program, documenting an IFSAC seal for Fire Fighter II, and passing the applicable state examination may be granted an IFSAC seal as an Airport Fire Fighter by making application to the commission for the IFSAC seal and paying applicable fees.

9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including but not limited to:

A. Discussion and possible final adoption on proposed amendments, new sections, repeals, and rule reviews as follows:

3. Proposed amendments to 37 TAC, Chapter 437, Fees, including, but not limited to §437.5(a) (f) (j) (k) (n) Renewal Fees, and §437.13 (a) Processing Fees for Test Application.

Chapter 437 Fees

§437.3. Certification Fees.

- (a) A ~~\$85~~ [~~\$35.00~~] non-refundable application fee is required for each certificate issued by the Commission. If a certificate is issued within the time provided in §401.125 of this title (relating to Processing Periods), the fee will be applied to the certification. If the certificate is denied, the applicant must pay a new certification application fee to file a new application.
- (b) The regulated employing entity shall be responsible for all certification fees required as a condition of appointment.
- (c) Nothing in this section shall prohibit an individual from paying a certification fee for any certificate which he or she is qualified to hold, providing the certificate is not required as a condition of appointment (see subsection (b) of this section concerning certification fees).
- (d) Any person who holds a certificate, and is no longer employed by an entity that is regulated by the Commission may submit in writing, a request, together with the required fee to receive a one-time certificate stating the level of certification in each discipline held by the person on the date that person left employment pursuant to the Texas Government Code, §419.033(b).

Multiple certifications may be listed on the one-time certificate. The one-time fee for the one time certificate shall be the same as the current certification fee provided in subsection (a) of this section.

- (e) A facility that provides basic level training for any discipline for which the Commission has established a Basic Curriculum must be certified by the Commission. The training facility will be charged a separate certification fee for each discipline.

§437.5. Renewal Fees.

- (a) A ~~\$85~~ [~~\$35~~] non-refundable annual renewal fee shall be assessed for each certified individual and certified training facility. If an individual or certified training facility holds more than one certificate, the Commission may collect only one ~~\$85~~ [~~\$35~~] renewal fee, which will renew all certificates held by the individual or certified training facility.
- (b) A regulated employing entity shall pay the renewal fee for all certificates which a person must possess as a condition of employment.
- (c) If a person re-enters the fire service whose certificate(s) has been expired for less than one year, the regulated entity must pay all applicable renewal fee(s) and any applicable additional fee(s). Upon payment of the required fees, the certificates previously held by the individual, for which he or she continues to qualify, will be renewed.
- (d) If a person reapplies for a certificate(s) which has been expired less than one year and the individual is not employed by a regulated employing entity as defined in subsection (b) of this section, the individual must pay all applicable renewal fee(s) and any applicable additional fee(s). Upon payment of the required fee(s), the certificate(s) previously held by the individual, for whom he or she continues to qualify, will be renewed.

- (e) Nothing in this section shall prohibit an individual from paying a renewal fee for any certificate which he or she is qualified to hold providing the certificate is not required as a condition of employment.
- (f) Certification renewal **information** [~~statements~~] will be **sent** [~~mailed~~] to all regulated employing entities and individuals holding certification at least 60 days prior to October 31 of each calendar year. Certification renewal **information** [~~statements~~] will be **sent** [~~mailed~~] to certified training facilities at least 60 days prior to February 1 of each calendar year.
- (g) All certification renewal fees must be returned with the renewal statement to the Commission.
- (h) All certification renewal fees must be paid on or before the renewal date posted on the certification renewal statement to avoid additional fee(s).
- (i) The certification period shall be a period not to exceed one year. The certification period for employees of regulated employing entities, and individuals holding certification is November 1 to October 31. The certification period of certified training facilities is February 1 to January 31.
- (j) All certification renewal fees received from one to 30 days after the renewal date posted on the renewal notice will cause the individual or entity responsible for payment to be assessed a non-refundable **\$42.50** [~~\$17.50~~] late fee in addition to the renewal fee for each individual for which a renewal fee was due.
- (k) All certification renewal fees received more than 30 days after the renewal date posted on the renewal notice will cause the individual or entity responsible for payment to be assessed a non-refundable **\$85** [~~\$35.00~~] late fee in addition to the renewal fee for each individual for which a renewal fee was due.
- (l) In addition to any non-refundable late fee(s) assessed for certification renewal, the Commission may hold an informal conference to determine if any further action(s) is to be taken.
- (m) An individual or entity may petition the Commission for a waiver of the late fees required by this section if the person's certificate expired because of the individual or regulated employing entity's good faith clerical error, or expired as a result of termination of the person's employment where the person has been restored to employment through a disciplinary procedure or a court action. All required renewal fees including applicable late fees and all required continuing education must be submitted before the waiver request may be considered.
 - (1) Applicants claiming good faith clerical error must submit a sworn statement together with any supporting documentation that evidences the applicant's good faith efforts to comply with Commission renewal requirements and that failure to comply was due to circumstances beyond the control of the applicant.
 - (2) Applicants claiming restoration to employment as a result of a disciplinary or court action must submit a certified copy of the order restoring the applicant to employment.
- (n) An individual, upon returning from activation to military service, whose certification has expired, must notify the Commission in writing. The individual will have any normally associated late fees waived and will be required to pay a **\$85** [~~\$35.00~~] renewal fee.

§437.13. Processing Fees for Test Application.

- (a) A non-refundable application processing fee of ~~\$85~~^{\$35.00} shall be charged for each examination.
- (b) Fees will be paid in advance with the application or the provider of training may be invoiced or billed if previous arrangements have been made with the Commission.



Lake Travis Fire Rescue

Travis County Emergency Services District No. 6

March 4, 2011

Chris Connealy
Fire Chief
Cedar Park Fire Department
715 Discovery, Suite 311
Cedar Park, Texas 78613

Dear Chief Connealy:

As a fellow member of the Texas Fire Chief's Association, I support your efforts on behalf of the Texas Commission on Fire Protection's budget issues.

I also strongly agree that the TCFP needs to continue to function at least at a basic level to ensure firefighter safety, enable regulatory oversight of fire departments so established rules are followed and continue in-house curriculum for firefighter certifications.

I am an advocate for potential solutions such as raising fees or making the TCFP self-supporting in order to retain the full-time employees and I deem the options feasible.

All budget and financial issues are extremely difficult in these gloomy economic conditions, but reducing the TCFP's staff and allowing the Texas Department of Insurance to handle the workload when they do not have additional positions is not the answer.

If I can be of any help, please let me know.

Sincerely,

James N. Linardos
Fire Chief
Travis County ESD No. 6/
Lake Travis Fire Rescue

From: Don Smith [<mailto:dsmith@esd4.org>]
Sent: Monday, March 07, 2011 11:41 AM
To: Gary Warren
Subject: Fees

Good morning Chief Warren, I just wanted to let you know that any fee increases will have a negative effect on small departments across Texas.

I am doing some work for ESD12 in eastern Travis County and their tax base when down 15% to 20% this last year. The appraisal office as told us that eastern Travis County will see another 2% decrease.

So I can not support added fees are increased fee amounts.

Thanks Chief Don Smith

ps: Class Eleven is looking very good. They graduate in April.



TEXAS MUNICIPAL LEAGUE

President **Robert Cluck**, Mayor, Arlington
Executive Director **Bennett Sandlin**

March 10, 2011

Texas Commission on Fire Protection
1701 N. Congress Avenue
Austin, TX 78701

Dear Commission Members:

I am writing to express the Texas Municipal League's concerns with your proposal to raise certification and other fees. Raising fees would impact hundreds of Texas cities by making it more expensive for them to provide fire fighting services to their citizens.

Texas cities are required, under Section 419.026 of the Government Code, to pay for each fire fighter's certification. The fees for certification, and those for examinations, are limited by Section 419.026 to the "amount designed to recover the commission's costs" in preparing certifications and the "cost of preparing, printing, administering, and grading" examinations. Based on those provisions, the commission is required to ensure that its fees do not reflect more than the cost of providing its services to cities and their fire fighters.

TML is aware that the state budget shortfall is making it difficult for state agencies to continue their functions, and that every state agency has been asked to look for cost-saving measures. Texas cities simply ask that the financial burden of state-created requirements not be placed on cities through higher fees. Like the state, cities are having to make hard choices regarding their budgets, and fee increases on an essential public function would make it even more difficult for a city to provide the services demanded by its citizens.

Cities receive little state funding for providing fire fighting services, and any increase in fees would mean a further expansion of the practice of cities financing state agencies. TML requests that the commission avoid placing additional burdens on cities that provide essential fire services.

Please contact me with questions or concerns.

Sincerely,

Laura Mueller
Assistant General Counsel

Deborah Cowan

From: Mark Roughton
Sent: Monday, March 14, 2011 2:14 PM
To: Gary Warren; Deborah Cowan
Cc: John (Jake) Soteriou
Subject: FW: Proposed Fee Change

From: Lewis King [<mailto:lking@round-rock.tx.us>]
Sent: Monday, March 14, 2011 1:57 PM
To: info
Subject: Proposed Fee Change

I feel it is vital to the fire service in Texas to keep the TCFP, even if that means this increase in fees. I understand Cities will object to the increase. I do not mind changing the rules requiring the individual to pay for their renewal. There are many professions where it is the responsibility of the individual to pay for the certifications that allow them to work.

Lewis M. King
Round Rock Fire Dept.
Battalion Chief - Training
Office (512) 218-6634
Nextel (512) 801-3691
Pager (512) 204-8634

Train Often / Be Safe

From: dgifford@lumbertonfirerescue.org [mailto:dgifford@lumbertonfirerescue.org]
Sent: Wednesday, March 16, 2011 5:03 PM
To: Chris Connealy
Subject: Re: Fwd: Legislative Update

Thank for the update Chief.

We were wondering about some of the background behind this decision and fully support the measure. We cannot allow the Commission to loose it's foot hold on safety and compliance regarding the well fare of our states FF's.

Have a great day,

Dennis

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Dennis M. Gifford
Chief - Lumberton Fire & EMS
FD Cell (409) 284-2527
dgifford@lumbertonfirerescue.org
<http://www.lumbertonfirerescue.org>

> From: Chris Connealy [mailto:Chris.Connealy@cedarparktx.us]
> Sent: Tuesday, March 15, 2011 6:38 PM
> To: Andy Jones; Betty Wilkes; Dean Van Nest; JD Gardner; John Brown; Larry McRae; Lenny Perez; Mike Baker; Mike Donoho; Randy Cain; Robert Isbell; Shawn Snider; Shon Blake; Steve Ross; Vance Riley; Walt Daugherty; Chris Connealy; David Smith; John Ballard; Julie Acevedo; Randy Cain; Scott Kerwood
> Cc: Mike Higgins; Chris Barron; Steve Perdue; Bill Gardner; training@kylefire.com
> Subject: Legislative Update
>
>
> Regional Directors, please forward this message to your region.
>
>
> All,
>
> The Fire Commission had an emergency meeting this past Monday to discuss raising fees based on the contingency rider approved by the House Appropriations Committee. As you recall, the original Legislative Budget Board (LBB) budget was to remove 14 positions from the TCFP and the agency would go from 37 FTE's to 23. The positions represent the administrative staff of the Commission such as the admin assistant, finance, HR, IT, and the librarian. Basically, the Executive Director would have no support staff. These duties would be transferred to the Texas Department of Insurance (TDI) to support the Fire Commission. However, TDI is not getting any new positions. While the Commission staff of inspectors, testing and curriculum would still be there, but the administrative tasks would be handled by an agency that has no connection to the Commission. This is not in the best interest of the Commission or Texas Firefighters..

>

> I had Commission staff develop a minimal budget that would keep a minimum number of administrative staff to support the front-line employees and they proposed submitting a budget with eight positions above LBB's proposed budget and the agency would have 31 FTEs. This would still require six employees to be laid off. This is a difficult issue and two draft contingency riders were proposed to the Senate Finance and House Appropriations Committees. One was to raise fees from the current \$35 to \$50. The other proposal was to raise fees from \$35 to \$85 and make the agency self-funded and no longer tied to the general revenue fund of the state. There are pros and cons to both proposals. However in reality, both are not great choices when considering raising fees, but the demise of the Fire Commission is not in the best interest of the Texas fire service. After many meetings and hearings, the House Appropriations committee only approved the proposed rider to raise fees to \$85 and make the agency self-funded.

>

> In order for this rider to be approved, the Fire Commission had to meet this past Monday and discuss the issue. The Firefighter Advisory Committee met before the Fire Commission meeting, representing various stakeholders in the Texas fire service on March 10th and after various people spoke voted 8-1 to recommend to the Commission to raise fees to \$85. The Commission met Monday, March 14th and after testimony from a number of fire service members, voted unanimously to publish in the Texas Register for a 30-day public comment period to raise fees to \$85. The Commission will take a vote on this issue at its April 28th meeting at 10:00 AM. Based on the April 28th vote by the Commission, will let the House Appropriations Committee know if we approved the contingency rider so they can make their final budget decision before the legislative session ends.

>

> The Commission fully realizes that this will have an impact on cities. During discussions of looking at raising fees, it was proposed that firefighters possibly share in the cost of paying their certification fee to minimize the impact at the local level. Every fire stakeholder group in the state had concerns with that proposal. Again, there are no ideal solutions. However, the Fire Commission and Firefighter Advisory Committee feel that taking the agency down to 23 FTEs will cause the agency to be non-effective and lead to its demise. The various fire service stakeholder groups testified at the meeting yesterday that while they do not like having to raise fees, the majority felt that the demise of the Fire Commission was a much worse option.

>

> I also went to the Capitol today to get support for HB 1876 to have a hearing before the Urban Affairs Committee. It was scheduled for tomorrow and was pulled from the agenda. This bill allows local voters to have an election to determine if they want to have a residential sprinkler requirement in their fire code. Rep. Truitt from Southlake/Grapevine/Keller is the bill sponsor. We greatly appreciate her support! Presently, the State of Texas does not allow communities that already did not have a residential sprinkler ordinance in place on September 1, 2009 cannot adopt an ordinance. The TFCA feels that the state should not make this decision and let local voters make this determination. As stated, the bill was pulled and there are groups out there that do not want this bill to get a hearing.

>

> Julie Acevedo and I met with elected members and/or their staff that sit on the Urban Affairs Committee today urging that a hearing date be set for this bill.

Julie and I will meet with the Rep. Dutton (Houston) on Thursday since he was not available today. At that point, the TFCA would have met with all members of the Urban Affairs Committee. Chiefs that have representatives on the Urban Affairs Committee are encouraged to write a letter/e-mail/or call these representatives and let them know you support HB 1876 and desire a hearing date be set in the near future. This is critically important. Please refer to the Friday Report that listed Urban Affairs members.

>
> This is an extremely busy and very challenging session. We need your support of the Texas Commission on Fire Protection so we can make sure our firefighters have good PPE, SCBAs, PASS devices, a number of SOP's, and other regulatory issues in place by regulating the fire service. Commission staff typically find a number of violations during inspections and help chief officers to be ensured that another set of eyes is making sure firefighters are safe. Equally, professional development by having good curriculum and certifications issued is also very important for Texas firefighters. Many firefighters get incentive pay based on Commission certifications and we are also assured that new firefighters coming into the service meet minimum standards.

>
> Again, HB 1876 also needs your support by contacting your state elected officials to support this bill.

>
> Stay safe,
>
> Chris Connealy
> Fire Chief
> TFCA Legislative Committee Chairman

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> Version: 8.5.449 / Virus Database: 271.1.1/3507 - Release Date: 03/14/11
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Duncanville Fire Department

"Protecting Lives and Property with Pride and Tradition"

MEMORANDUM

TO: Chris Connealy, Presiding Officer Texas Fire Commission

FROM: David Giordano, Fire Chief City of Duncanville

SUBJECT: House Appropriations Committee Information

DATE: March 18, 2011

Chris, I have a few questions regarding the proposed budget and the proposal for the Texas Fire Commission to become a self funded agency. Before I get to my questions let me clearly state the Texas Fire Commission must remain in tact and maintain its current oversight authority over Texas Fire Departments. The Commission is extremely important to the safety of Texas Firefighters.

With that being said I am interested in understanding the operational and funding aspects of the below items.

1. Two FTEs necessary to provide staff services support to agency personnel. What is the operational impact of reducing this to one FTE, and what impact will this change have on the service provided to your customers?
2. One FTE to prepare and disseminate information regarding agency functions to the public, media, legislature, regulated entities and other state agencies. Can these duties as outlined be combined into the administrative and IT functions? This would eliminate one FTE position.
3. What is the impact of reducing the IT staff by one FTE, while adding additional responsibilities of ensuring compliance with State of Texas Electronic Information Resources Accessibility Standards to the IT staff responsibilities?
4. Has there been any consideration given to deferring the library program until the next budget cycle? What would be the overall impact of deferring the program?
5. To assist with travel of personnel has there been any discussion of changing the inspection program from two to three years? What would be the impact of such

a plan? Has there been any consideration given to some type of department self reporting to the commission regarding PPE, SCBA and training for the years a dept does not have an on-sight inspection?

I fully understand the Texas Fire Commissions desire to save as many position as possible and continue the level of service the agency is providing. Unfortunately, reality is not allowing any of us to do business as usual. The City of Duncanville has recently reduced staffing from four to three on our engines, we have eliminated positions within the city, our personnel have experienced furlough days for two consecutive years, currently I have Firefighter positions that are frozen and the city has reduced operating hours of several city facilities.

Although the national housing market is up 2.94% the Dallas area is experiencing a decline of 3.76%, the City of Duncanville's' last two sales tax checks were down 8% and 4% bringing in revenue that is below our 2005 sales tax. Our situation is as critical as the funding situation for the Commission.

As stated earlier I fully support the responsibilities of the Commission but I do not support the increase of over 100% for certification fees. Working with the various state agencies I hope the commission will continue to assess every aspect of its proposed budget and find a middle ground that will allow for critical services to be delivered while eliminating or deferring less important services until the economy improves.

My questions above focus on consolidating some job functions while reducing your staff by 3 FTEs. My suggestions and or comments are intended to allow the Commission to provide critical services while also allowing the Commission to find a way to reduce certification fees to something less than the proposed rate.

I look forward to your response and if you require additional information please contact me.

Respectfully submitted.

From: Gary Warren [<mailto:gary.warren@tcfp.state.tx.us>]
Sent: Tuesday, March 22, 2011 2:54 PM
To: Chris Connealy
Cc: dgiordano@ci.duncanville.tx.us
Subject: RE: Texas Fire Commission budget 2011

Chief,

Following is my response to Chief David Giordano's e-mail to you dated March 18, 2011.

1. The Texas Commission on Fire Protection's support services staff in the current biennium (2010-2011), not including IT personnel, consists of seven FTEs. The current proposal to reduce this to two FTEs will make it extraordinarily difficult for the agency to manage its accounting, HR, strategic planning and other indirect administrative functions; further reducing this item to one FTE, as you propose, would have a direct impact on agency customers, including delays in processing incoming mail (including all revenue), delays in deposits to the treasury, lack of oversight in reconciling USAS and ABEST records, etc.
2. The agency has already combined its Public Information Officer and Information Resource Management functions under one FTE. This individual manages the public side of the agency's website, receives and routes all incoming e-mail, and manages all media inquiries; additionally, this individual is responsible for overseeing the purchase and maintenance of all the agency's computer equipment, for ensuring compliance with all DIR reporting requirements, and managing all of the agency's IR projects. Eliminating this position and further disseminating these responsibilities to other staff members would overburden the remaining staff.
3. The agency strives to ensure that its systems meet all state and federal EIR accessibility guidelines. Any additional reductions in IT staff would make it difficult to meet any additional requirements in this area. The biggest current danger the agency faces with its IT systems is a shortage of personnel, since there is no personnel redundancy, the agency's systems are critically dependent on the knowledge and skills of its current IT staff.
4. The agency could defer purchases of some new materials until the next biennium, but departments which rely on the library for current materials would, of course, be ill-served. Some materials, such as subscriptions to the NFPA codes and other periodicals, would quickly be out of date if allowed to lapse. And without a research librarian (who also serves as the agency's records manager), customers who have come to rely on the agency for answers on difficult subjects would have to go elsewhere to find research assistance.
5. The agency is required by law (Texas Government Code, Chapter 419.027) to conduct biennial inspections. Switching to a three-year cycle would require a change in the statute, which can only be done by the legislature. During the last biennium, the agency was forced to reduce the number and frequency of inspection trips (i.e., sending fewer inspectors to each department, etc.) in order to meet its mandatory budget reductions. Self-reporting would require further development of the agency's IT systems, which are already under a heavy burden to meet existing demands.

While the agency appreciates your statement that you "fully understand the Texas Fire Commissions desire(s) to save as many positions as possible and continue the level of service the agency is providing," we feel that it mischaracterizes the commission's goals throughout this budget struggle. The agency is not trying to save as many positions as possible; instead, it is sacrificing as many FTEs as possible while continuing to meet its statutory obligations. The most current proposals reduce the agency from its

2010-2011 level of 40 FTEs to 31 FTEs, with no concurrent reduction in the agency's statutory duties and responsibilities. A reduction of three additional FTEs, as suggested, would take the agency from 40 to 28, representing an overall cut of 30 percent of the agency's workforce, which would simply be cutting further into the bone.

Gary

From: Chris Connealy [<mailto:Chris.Connealy@cedarparktx.us>]
Sent: Friday, March 18, 2011 3:41 PM
To: Gary Warren; Deborah Cowan
Cc: dgiordano@ci.duncanville.tx.us
Subject: FW: Texas Fire Commission budget 2011

Gary,

Can you please reply to Chief Giordano's questions.

Thank you,

Chris Connealy
Fire Chief
Cedar Park Fire Department
715 Discovery, Suite 311
Cedar Park, TX 78613
P 512-401-5226 F 512-260-2464

From: David Giordano [<mailto:dgiordano@ci.duncanville.tx.us>]
Sent: Friday, March 18, 2011 1:38 PM
To: Chris Connealy
Subject: Texas Fire Commission budget 2011

Please review the attached memorandum in which I have asked a few questions regarding the Commission and the proposed budget. I look forward to hearing from you and I know you have a very challenging task ahead as the Commission Presiding Officer.



Austin Fire Department

"Our Mission Goes Beyond Our Name"

4201 Ed Bluestein, Austin, TX 78721
www.CityofAustin.org/fire

March 29, 2011

Chief Chris Connealy
Presiding Officer
Texas Commission on Fire Protection
1701 N. Congress Avenue
Austin, TX 78701

Dear Chief Connealy:

On behalf of the six largest fire departments in the state of Texas, I am writing to protest the proposal you plan to put before the House Appropriations Committee on April 28 to raise annual testing and certification fees from \$35 to \$85 per firefighter. For those of us with large departments, **the proposed fee represents a 143 percent increase** that will result in hundreds of thousands of dollars, putting significant additional strain on our budgets in a downward economic cycle.

We firmly believe in the mission and purpose of the Texas Commission on Fire Protection (TCFP); that is not in question. However, the goal of becoming a self-funded agency on the backs of the very departments that you regulate is not an acceptable ideal. Those of us who have signed this letter very much support the Commission, but **not** the fee increase; it falls in line with additional unfunded mandates required by the Commission and most recently includes mandatory advanced inspections and replacement of Personal Protective Equipment (PPE) every 10 years, regardless of condition.

In 2009, TCFP increased the annual fee from \$20 to \$35; just three years later, you propose to raise these fees again from \$35 to \$85 for **a total three year increase of 325 percent.** Currently, based on the 2009 rate, the state's six largest departments (with a combined uniformed strength of 10,498) contribute a total of approximately \$99,775 to the TCFP budget. If the new rate is approved, that amount will jump to approximately \$754,590 beginning in 2012. For a department-by-department breakdown, please see the attached spreadsheet.

Additionally, this increase may have a "chilling effect" on professional development since departments will have to pay twice—once for the application to test and again to apply for certification. For the Austin Fire Department to elevate a firefighter to Fire Officer III would cost \$100 in 2008 and \$280 in 2009. If this increase is approved, it will cost \$765 per person in 2012!

Also, departments have had to bear an additional fee in the last two years which was imposed by TCFP rule. This fee is for background investigations that must be conducted prior to initial certification issuance. In Dallas, for example, this cost (although an FBI NCIC fingerprint check is already conducted as part of the pre-employment process) is in excess of \$40 per firefighter.

To compound the issue, Dallas Fire Rescue can only use L1, which is an agency TCFP has instructed departments to use for the background screening.

It seems disingenuous to expect us to shoulder the majority of funding for TCFP when no additional services are being provided. In fact, we now do more of the work ourselves that TCFP used to provide—certificate issuance, database management, etc. We would be interested to hear what, if any, additions to the current service level we are experiencing to justify such a sharp proposed fee hike.

The bottom line is that although we do wholeheartedly support the TCFP, we cannot support another unfunded mandate to help you become a self-funded entity. I hope you will take our strong disapproval into account before levying such large fees on fire departments across the state in these tight budget conditions.

Sincerely,



Rhoda Mae Kerr
Fire Chief



Terry Garrison, Fire Chief/Houston Fire Department



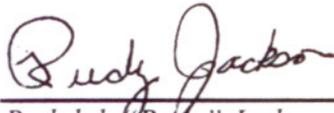
Charles Hood, Fire Chief, San Antonio Fire Department



Otto Drozd III, Fire Chief, El Paso Fire Department



Eddie Burns, Sr., Fire Chief, Dallas Fire Rescue



Rudolph "Rudy" Jackson, Jr., Fire Chief, Fort Worth Fire Department

xc: Members of the House Appropriations Subcommittee on Articles I, IV, and & V/Texas House of Representatives

Gary L. Warren, Sr., Executive Director/Texas Commission on Fire Protection

<u>Department</u>	<u>2009: \$20-\$35</u>	<u>2012: \$35-\$85</u>	<u>2012: Difference - 142.86% increase</u>	<u># of Uniformed Personnel (Authorized Strength)</u>
Austin Fire Department	\$21,740 - \$38,045	\$38,045 - \$92,395	\$54,350	1087
Dallas Fire Rescue	\$35,660 - \$62,405	\$62,405 - \$151,555	\$89,150	1783
El Paso Fire Department	\$17,640 - \$30,870	\$30,870 - \$74,970	\$44,100	882
Fort Worth Fire Department	\$34,330	\$85,765	\$51,435	905
Houston Fire Department	\$62,820	\$209,400	\$146,580	4188
San Antonio Fire Department	\$33,060 - \$57,855	\$57,855 - \$140,505	\$82,650	1653
TOTALS	\$99,775	\$754,590	\$468,265	10,498

9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including but not limited to:

B. Discussion and possible action on proposed amendments, new sections, repeals, and rule reviews as follows:

- 1. Proposed amendments to 37 TAC, Chapter 427, Training Facility Certification, including, but not limited to §427.1(h) Minimum Standards for Certification Training Facilities for Fire Protection Personnel; and §427.201 (e), Minimum Standard for Distance Training Provider.**

Chapter 427

TRAINING FACILITY CERTIFICATION

SUBCHAPTER A

ON-SITE CERTIFIED TRAINING PROVIDER

§427.1. Minimum Standards for Certified Training Facilities for Fire Protection Personnel.

- (a) An on-site training facility must be certified by the commission in each discipline with a commission approved curriculum for which the facility provides accredited training for fire protection personnel certification. An on-site training facility is where instructors and students are in immediate proximity and where content is instructed primarily in classrooms, at demonstration projects, in fire simulation structures, on fire apparatus, or at training sites in the field under direct supervision of the training facility instructors.
- (b) A certified on-site training facility may be approved to instruct in any one or all of the fire protection personnel curricula. Minimum requirements for each curriculum must be met to receive certification.
- (c) Minimum requirements for certification as a certified on-site training facility shall include facilities, apparatus, equipment, reference materials, standard operating procedures, instructors, and records to support a quality education and training program. The resources must provide for classroom instruction, demonstrations, and practical exercises for the trainees to develop the knowledge and skills required for fire protection personnel certification.
- (d) The on-site facilities and training shall be performance oriented, when required. Practical performance training with maximum participation by trainees shall be an integral part of the training program. The evaluation process for each phase of training will emphasize, as required, performance testing to determine if the trainee has acquired the knowledge and skills to achieve the required level of competency as required by the respective curriculum.
- (e) It must be clearly understood that the minimum standard for training facilities is applicable only as the title implies and does not address the additional training facility resources which are required for the continuing in-service training essential to the development and maintenance of a well-coordinated and effective fire service organization.
- (f) An organization, installation, or facility must submit a written application for certification as a certified on-site training facility to the commission. Such application will include descriptions and addresses of physical facilities together with inventory of apparatus, equipment, and reference material to be utilized in conducting the basic curriculum as specified by the commission. It is not required that the equipment be owned by, permanently assigned to, nor kept at a training facility, but must be readily available for instructional purposes. A training facility must submit a letter of commitment with the original training facility certification application authorizing the use of resources not

controlled by the training facility from the provider of said resources. A copy of the letters of commitment must be maintained on-site and be available for review. Photographs of resources annotated to reflect their identity must be included with the application. When seeking training approvals, the facility shall certify that the resources are provided in accordance with this chapter.

- (g) All training for certification must be submitted to the commission in writing for approval at least 20 days prior to the proposed starting date of the training. Approved courses are subject to audit by commission staff any time during the approved schedule. Any deviation in the approved course schedule or content must be reported to the commission within three business days of the deviation. The academy coordinator will:
 - (1) attest to the fact that the training meets the competencies in the applicable Commission Curriculum and/or NFPA Standards;
 - (2) submit a testing schedule for all required academy skills; and
 - (3) notify the Commission of any changes in instructor staff and/or field examiners.

~~[(h) An on-site training provider certified for the first time by the commission will receive, at no charge, one Commission Certification Curriculum and Standards Manual on CD that is to be utilized by the certified on-site training provider's instructors. The on-site provider is responsible for ensuring that all subjects are taught as required by the respective curriculum. Additional CD copies may be purchased from the commission or downloaded from the agency web site. On-site training providers that renew their certification will receive appropriate updates at no charge.]~~

§427.3. Facilities.

The following minimum resources, applicable to the curricula, are required for certification as a certified on-site training facility. These facilities may be combined or separated utilizing one or more structures. In either event the facilities must be available and used by the instructor and trainees.

- (1) A training tower equivalent to two or more stories in height. The term "training tower" as used in these standards is a structure suitable for training in the practical application of required ladder, rescue, hose and rope skills training.
- (2) A facility for classroom instruction and testing shall have seating capacity for anticipated trainees. The facility must be conducive for an effective learning environment including environmental comfort for instructors and students, physical requirements needed for good seeing and hearing, adequate lighting, and free of outside distractions.
- (3) An area for practical application of principles and procedures of fire fighting, hose loading, pumper operation, to include friction loss, nozzle reaction, fire stream patterns, and GPM discharge utilizing various layouts for hand lines and/or master stream appliances.
- (4) An enclosed area or room for use in practical training with self-contained breathing apparatus. This may be a smoke and fire room or enclosed area which can be charged with smoke-producing devices to provide a realistic training environment.

- (5) A structure suitable for interior live fire training and meeting the requirements of the basic curriculum pertaining to the particular discipline(s) which the training facility is approved to teach, shall be available for use by the instructors to teach interior live fire training.
- (6) Facilities to conduct exterior live fire training as required by the basic curriculum pertaining to the particular discipline(s) which the training facility is approved to teach, shall be available for use by the instructors to teach exterior live fire training.
- (7) If performance or driving skills are part of the curriculum, suitable area(s) for practicing required skills, demonstration of skills, and performance testing must be available.

§427.5. Apparatus.

- (a) Certified on-site training facility--approved for basic structural fire protection personnel certification training.
 - (1) A pumper apparatus fully equipped as required by the basic fire suppression curriculum shall be readily available for use by the instructors for instructional purposes.
 - (2) Ladders or a ladder truck as required by the basic fire suppression curriculum shall be readily available for use by the instructors for instructional purposes.
- (b) Certified on-site training facility--approved for basic aircraft rescue fire fighting personnel certification training. Fire apparatus that is equipped to perform aircraft operations as required by the basic aircraft fire protection curriculum must be readily available for use by the instructors for instructional purposes.
- (c) Certified on-site training facility--approved for Driver/Operator – Pumper certification training. A piece of fire apparatus with a permanently mounted fire pump that has a rated discharge capacity of 750 gpm (2850 L/min) or greater as defined in NFPA 1901, Standard for Automotive Fire Apparatus.
- (d) Certified on-site training facility approved for hazardous materials technician certification training must have access to props and/or simulators, protective suits and monitoring equipment required for skills training and testing.

§427.7. Protective Clothing.

Each and every set of protective clothing, including proximity clothing, that will be used during the course of instruction for a commission approved fire protection personnel curriculum shall comply with §435.1 of this title (relating to Protective Clothing). This rule applies whether the protective clothing is provided by the academy or the trainee.

- (1) Protective clothing and elements that are no longer in use to the organization for emergency operations service but are not contaminated, defective, or damaged may be used for training that does not involve live fire training provided such clothing and elements are appropriately marked to be easily recognized.

- (2) Protective clothing used for aircraft rescue, live fire training, shall be suitable for the type of fire the student is being trained for and shall be determined by the chief training officer of the training facility.

§427.9. Equipment.

The following minimum equipment, applicable to the curricula the training facility is certified to teach, is required for certification as a certified on-site training facility. The equipment must be available for use by the certified training facility:

- (1) If instruction in the use of self-contained breathing apparatus is a part of the curriculum being taught, then self-contained breathing apparatus in sufficient numbers shall be provided to enable each trainee to wear the equipment for at least the life of one breathing air tank during the training. If during the course of the training, a trainee will be subjected to a hazardous atmosphere or where the atmosphere is unknown, the trainee shall be provided with a self-contained breathing apparatus. (Note: All self-contained breathing apparatus used by a certified training facility and the air used in self-contained breathing apparatus must comply with §435.3 of this title (relating to Self-Contained Breathing Apparatus)). This rule applies whether the self-contained breathing apparatus is provided by the academy or the trainee. All students, instructors, safety personnel, and other personnel participating in any evolution or operation of fire suppression during the live fire training shall breathe from an SCBA air supply whenever operating under one or more of the following conditions:
 - (A) in any atmosphere that is oxygen deficient or contaminated by products of combustion, or both;
 - (B) in any atmosphere that is suspected of being oxygen deficient or contaminated by products of combustion, or both;
 - (C) in any atmosphere that can become oxygen deficient or contaminated, or both; and/or
 - (D) below ground level;
- (2) standard classroom equipment to include chalkboard, speaker rostrum, supportive instructional aids available to include audio-visual projection equipment. The use of cutaways, models, flip charts, and other visual aids are recommended to enhance effectiveness of the instruction. Note: The instructor needs to ensure all necessary equipment is available for trainees to use regarding the basic performance skills as identified in appropriate curriculum and to comply with §427.15 of this title (relating to Testing Procedures); and
- (3) other equipment, which may include training simulators and mock training aids, and tools required by the applicable curriculum.

§427.11. Reference Material.

A reference library is required. The library must contain the publications required to conduct research and develop lesson plans covering the material required in the applicable curriculum. The reference library material must be readily and easily accessible to students and instructors.

§427.13. Records.

- (a) Training records shall be maintained by the on site training facility that reflect:
 - (1) who was trained, subject, instructor, and date of instruction. (Note: Individual records are required rather than class records); and
 - (2) individual trainee test scores to include performance testing.
- (b) All training records must be maintained by the on-site training facility for a minimum of three years or in accordance with the requirement of the Texas State Library and Archives Commission, State and Local Records Management Division, whichever is greater.

§427.18. Live Fire Training Evolutions.

The most current edition of NFPA 1403, Standard on Live Fire Training Evolutions, shall be used as a guide when developing standard operating procedures for conducting live fire training. The following requirements shall apply for all Live Fire Training Evolutions conducted during basic certification training of fire protection personnel.

- (1) Prior to being permitted to participate in Live Fire Training Evolutions, the student shall have received training to meet the performance requirements for Fire Fighting I in NFPA 1001, Standard for Fire Fighter Professional Qualifications, related to the following subjects:
 - (A) safety;
 - (B) fire behavior;
 - (C) portable extinguishers;
 - (D) personal protective equipment to include SCBA;
 - (E) ladders;
 - (F) fire hose, appliances, and streams;
 - (G) overhaul;
 - (H) water supply;
 - (I) ventilation;
 - (J) forcible entry; and

- (K) fire fighter rescue.
- (2) The on-site lead instructor will insure that the water supply rate and duration for each individual Live Fire Training Evolution is adequate to control and extinguish the training fire, the supplies necessary for backup lines to protect personnel, and any water needed to protect exposed property.
- (3) The on-site lead instructor will insure that the buildings or props being utilized for live fire training are in a condition that would not pose an undue safety risk.
- (4) A safety officer shall be appointed for all Live Fire Training Evolutions. The safety officer shall have the authority, regardless of rank, to intervene and control any aspect of the operations when, in his or her judgment, a potential or actual danger, accident, or unsafe condition exists. The safety officer shall not be assigned other duties that interfere with safety responsibilities. The safety officer shall not be a student.
- (5) No person(s) shall play the role of a victim inside the building.
- (6) The participating student-to-instructor ratio shall not be greater than five to one.
- (7) Prior to the ignition of any fire, instructors shall insure that all personal protective clothing and/or self-contained breathing apparatus are NFPA compliant and being worn in the proper manner.
- (8) Prior to conducting any live fire training, a pre-burn briefing session shall be conducted. All participants shall be required to conduct a walk-through of the structure in order to have a knowledge of, and familiarity with, the layout of the building and to be able to facilitate any necessary evacuation of the building.
- (9) A standard operating procedure shall be developed and utilized for Live Fire Training Evolutions. The standard operating procedure shall include, but not be limited to:
 - (A) a Personal Alert Safety System (PASS). A PASS device shall be provided for all students and instructors participating in live fire training and shall meet the requirements in §435.9 of this title (relating to PASS devices). This applies whether the PASS device is provided by the academy or the trainee;
 - (B) a Personnel Accountability System that complies with §435.13 of this title shall be utilized;
 - (C) an Incident Management System;
 - (D) use of personal protective clothing and self-contained breathing apparatus;
 - (E) an evacuation signal and procedure; and pre-burn, burn and post-burn procedures.

§427.19. General Information.

- (a) All Texas certified training facilities shall meet these minimum requirements. No training credit will be recognized from a Texas training facility that has not been certified by the Commission, unless the program has been approved by the Commission as being equivalent. The Commission shall take action on an application for certification of a training facility within 30 days from receipt.

- (b) Certified training facilities shall conduct all training in a controlled and safe manner so that trainees are not subjected to unnecessary risks. Texas Government Code, §419.032(c) provides that fire protection personnel must complete a Commission-approved training course in fire suppression before being assigned to fire suppression duties. In addition, certified training facilities, whether operated by a fire department or other governmental or private training facility, shall not put trainees at risk by requiring or allowing a trainee to perform the duties of fire protection personnel at actual uncontrolled emergency situations such as, but not limited to, structure fires, aircraft fires, wildland fires, hazardous materials incidents or dangerous rescue situations.
- (c) A certified training facility may transport trainees to the site of an actual emergency for training purposes only if the following requirements are strictly adhered to:
 - (1) the trainees are kept in a group under the direct supervision of qualified instructors to maintain accountability and ensure their safety;
 - (2) the trainees are kept outside of the emergency operations area; and
 - (3) the trainees' activities are restricted to observation only and trainees are not allowed to participate in emergency operations.
- (d) Certified training facilities are subject to inspection by the Commission at any time during regular business hours.
- (e) In order to retain the certification as a certified training facility, schools desiring to make substantial changes in the facility or other conditions under which the school was approved shall coordinate such plans with the Commission.
- (f) The Commission shall be notified, in writing, within 14 days of any change from the original status under which the certification was issued.
- (g) The Commission may revoke, suspend, and/or probate the certification of a training facility when the Commission determines that the training facility:
 - (1) fails to provide the quality of training for which the facility was approved; or
 - (2) fails to comply with Commission rules and/or these minimum standards; or
 - (3) fails to submit required reports in a timely manner or submits false reports to the Commission; or
 - (4) fails to meet at least a 70-percent student pass rate on the state certification examination per course.

SUBCHAPTER B

DISTANCE TRAINING PROVIDERS

§427.201. Minimum Standards for Distance Training Provider.

- (a) The following definition is applicable to this subchapter only. Approved distance training is defined as fire training where instructors and students are primarily in different locations and content is instructed primarily using the internet or an intranet and courses must contain some level of interactivity. Distance training that serves as nothing more than electronic text is not acceptable. Online courses must provide the opportunity for the student to interact or ask questions via e-mail, chat rooms or some other method of communication. Other computer-mediated methods of instruction may be used to enhance instruction; however, the primary delivery method must be through the internet or an intranet.
- (b) A distance training provider must seek certification as a training facility in each discipline it intends to instruct.
- (c) In order to become a Commission-approved distance training provider; the provider must submit a completed Commission training facility application with supporting documentation and fees. Such application will include descriptions and addresses of where the distance training provider will have their course delivery and materials. A distance training provider must provide documentation of its ability to meet all minimum requirements for each discipline for which it seeks certification. The documentation must also identify how students and instructors will access resources as identified in the curriculum.
- (d) A distance training provider that applies for certification as a training facility in a discipline that includes skills training shall comply with Subchapter A of this chapter concerning minimum standards, facilities, apparatus, protective clothing, equipment, and live fire training utilized to teach and test the required skills.
- ~~(e) A distance training provider certified for the first time by the Commission will receive, at no charge, one Commission Certification Curriculum and Standards Manual on CD to be utilized by the certified distance training providers' instructors. The distance training provider is responsible for ensuring that all subjects are taught as required by the curricula. Additional CD copies may be purchased from the Commission or downloaded from the agency website. Distance training providers that renew their certification will receive appropriate updates at no charge.~~

§427.203. Records.

- (a) Training records shall be maintained by the distance training provider that reflect:
 - (1) Who was trained, subject, instructor, and date of instruction. (Note: Individual records are required rather than class records);
 - (2) Individual trainee test scores to include performance testing; and

- (3) Evidence to substantiate the test scores received by each trainee to include performance testing. Such records will include materials (completed tests and/or answer sheets, other documents, video or audio recording, etc.), and will provide identification of the examinee, identification of the evaluating field examiner, and the observer as defined in Chapter 439.
- (b) All distance training provider records must be maintained by the distance training provider for commission review for a minimum of three years or in accordance with the requirement of the Texas State Library and Archives Commission, State and Local Records Management Division, whichever is greater.
- (c) A master copy of tests will be maintained for review by commission representatives. The certified distance training provider shall maintain copies of all tests for a minimum of three years.

§427.209. General Information.

- (a) All distance training providers shall meet these minimum requirements. No training credit will be recognized from a distance training provider that has not been certified by the Commission. The Commission shall take action on an application for certification of a distance training provider/training facility provider within 30 days from receipt.
- (b) Distance training providers conducting on-site programs shall ensure that all training is conducted in a controlled and safe manner so that trainees are not subjected to unnecessary risks. In addition, certified training facilities shall not put trainees at risk by requiring or allowing a trainee to perform the duties of fire protection personnel at actual uncontrolled emergency situations such as, but not limited to, structure fires, aircraft fires, wildland fires, hazardous materials incidents or dangerous rescue situations.
- (c) A distance training provider may transport trainees to the site of an actual emergency for training purposes, only if the following requirements are strictly adhered to:
 - (1) the trainees are kept in a group under the direct supervision of qualified instructors to maintain accountability and ensure their safety;
 - (2) the trainees are kept outside of the emergency operations area: and
 - (3) the trainees' activities are restricted to observation only and trainees are not allowed to participate in emergency operations.
- (d) Distance training providers are subject to inspection by the Commission at any time during regular business hours. Distance training providers shall provide the Commission with access to the training facility to monitor the course in progress.
- (e) The Commission shall be notified, in writing, within 14 days of any change from the original status under which the certification was issued.
- (f) The Commission may revoke, suspend, and/or probate the certification of training when the Commission determines that the distance training provider:
 - (1) fails to provide the quality of training and education for which the provider was

approved; or

- (2) fails to comply with Commission rules and/or these minimum standards; or
- (3) fails to submit required reports in a timely manner or submits false reports to the Commission; or
- (4) per course, fails to meet at least a 70-percent student pass rate on the state certification examination.

9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including but not limited to:

B. Discussion and possible action on proposed amendments, new sections, repeals, and rule reviews as follows:

2. Proposed amendments to 37 TAC, Chapter 429, Minimum Standards for Fire Inspectors, including, but not limited to expiration and repeal of Subchapter A, §429.1, §429.3, §429.5, §429.7, §429.9, and §429.11, Subchapter B, Minimum Standards for Intermediate Fire Inspector Certification, §429.201 Minimum Standards for Fire Inspection Personnel, §429.203 Minimum Standards for Basic Fire Inspector Certification, §429.205 Minimum Standard for Intermediate Fire Inspector Certification, §429.207 (3) Minimum Standards for Advanced Fire Inspector Certification, §429.209 Minimum Standard for Master Fire Inspector Certification, and §429.211 (c) (d) International Fire Service Accreditation Congress (IFSAC) Seal.

Chapter 429

MINIMUM STANDARDS FOR FIRE INSPECTORS

~~[SUBCHAPTER A]~~

~~[MINIMUM STANDARDS FOR FIRE INSPECTOR CERTIFICATION BASED ON REQUIREMENTS IN EFFECT] PRIOR TO JANUARY 1, 2005]~~

~~§429.1. Minimum Standards for Fire Inspection Personnel.]~~

- ~~[(a) Subchapter A of this chapter will expire on December 31, 2010.]~~
- ~~[(b) Fire protection personnel of a governmental entity who are appointed to fire code enforcement duties must be certified, as a minimum, as a basic fire inspector as specified in §429.3 of this title (relating to Minimum Standards for Basic Fire Inspector Certification) within one year of initial appointment to such position.]~~
- ~~[(c) Prior to being appointed to fire code enforcement duties, all personnel must complete a Commission-approved basic fire inspection training program and successfully pass the Commission examination pertaining to that curriculum.]~~
- ~~[(d) Individuals holding any level of fire inspector certification shall be required to comply with the continuing education requirements of §441.13 of this title (relating to Continuing Education for Fire Inspection Personnel).]~~
- ~~[(e) Code enforcement is defined as the enforcement of laws, codes, and ordinances of the authority having jurisdiction pertaining to fire prevention.]~~

~~§429.3. Minimum Standards for Basic Fire Inspector Certification.]~~

~~[In order to be certified by the Commission as a Basic Fire Inspector an individual must have completed a Commission-approved Basic Fire Inspector Curriculum dated prior to January 1, 2005, and successfully pass the Commission examination as specified in Chapter 439 of this title (relating to Examinations for Certification).]~~

~~§429.5. Minimum Standards for Intermediate Fire Inspector Certification.]~~

- ~~[(a) — Applicants for Intermediate Fire Inspector Certification holding the prerequisite Basic Fire Inspector certification based on the curricula in place before January 1, 2005, must meet the following requirements:]~~
 - ~~[(1) acquire a minimum of four years of fire protection experience and complete the training listed in one of the following options:]~~
 - ~~[(A) Option 1—Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or]~~

~~[(B) Option 2—Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List course and four B-List courses. (See the exception outlined in subsection (c) of this section); or]~~

~~[(C) Option 3—Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses (See the exception outlined in subsection (c) of this section).]~~

~~[(b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.]~~

~~[(c) The training required in this section must be in addition to any training used to qualify for any lower level of Fire Inspector Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.]~~

§429.7. Minimum Standards for Advanced Fire Inspector Certification.

~~[(a) Applicants for Advanced Fire Inspector certification holding the prerequisite Basic Fire Inspector certification based on the curricula in place before January 1, 2005 must complete the following requirements:]~~

~~[(1) hold as a prerequisite an Intermediate Fire Inspector Certification as defined in §429.5 of this title (relating to Minimum Standards for Intermediate Fire Inspector Certification); and]~~

~~[(2) acquire a minimum of eight years of fire protection experience and complete the training listed in one of the following options:]~~

~~[(A) Option 1—Successfully complete six semester hours of fire science or fire technology from an approved Fire Protection Degree Program and submit documentation as required by the commission that the courses comply with subsections (b) and (c) of this section; or]~~

~~[(B) Option 2—Completion of coursework from either the A-List or the B-List courses. Acceptable combinations of courses are as follows: two A-List courses; or eight B-List courses; or one A-List course and four B-List courses. (See the exception outlined in subsection (c) of this section); or]~~

~~[(C) Option 3—Completion of coursework from either the A-List or the B-List courses in combination with college courses in fire science or fire protection. Acceptable combinations of courses are three semester hours meeting the requirements of Option 1 with either one A-List course or four B-List courses (See the exception outlined in subsection (c) of this section).]~~

~~[(b) Non-traditional credit awarded at the college level, such as credit for experience or credit by examination obtained from attending any school in the commission's Certification Curriculum Manual or for experience in the fire service, may not be counted toward this level of certification.]~~

~~[(c) — The training required in this section must be in addition to any training used to qualify for any lower level of Fire Inspector Certification. Repeating a course or a course of similar content cannot be used towards this level of certification.]~~

~~**§429.9. Minimum Standards for Master Fire Inspector Certification.**~~

~~[(a) Applicants for Master Fire Inspector Certification must complete the following requirements:]~~

~~[(1) hold as a prerequisite an Advanced Fire Inspector Certification as defined in §429.7(a) of this title (relating to Minimum Standards for Advanced Fire Inspector Certification); and]~~

~~[(2) acquire a minimum of 12 years of fire protection experience, and 60 college semester hours or an associate degree, which includes at least 18 college semester hours in fire science subjects.]~~

~~[(b) College level courses from both the upper and lower division may be used to satisfy the education requirement for Master Fire Inspector Certification.]~~

~~**§429.11. International Fire Service Accreditation Congress (IFSAC) Seal.**~~

~~[(a) Individuals who hold commission Fire Inspector certification prior to January 1, 2005, may be granted International Fire Service Accreditation Congress (IFSAC) seals for Inspector I and Inspector II by making application to the commission for the IFSAC seals and paying applicable fees.]~~

~~[(b) Individuals who hold commission Fire Inspector certification prior to January 1, 2005, may apply to test for Plan Examiner I. Upon successful completion of the examination an IFSAC seal for Plan Examiner I may be granted by making application to the commission for the IFSAC seal and paying the applicable fee.]~~

~~[(c) Individuals who pass the applicable state examination based on the curriculum in place prior to January 1, 2005, may be granted IFSAC seals for Inspector I and Inspector II by making application to the commission for the IFSAC seals and paying applicable fees.]~~

~~[(d) Individuals who pass the applicable state examination based on the curriculum in place prior to January 1, 2005, may apply to test for Plans Examiner I. Upon successful completion of the examination an IFSAC seal for Plans Examiner I may be granted by making application to the commission for the IFSAC seal and paying the applicable fee.]~~

~~[(e) Individuals who pass the applicable commission examination(s) as specified in Chapter 439 of this title (relating to Examinations for Certification) pertaining to Chapter 4 of the commission's Certification Curriculum Manual, as approved by the commission in accordance with Chapter 443 of this title (relating to Certification Curriculum Manual), on or after January 1, 2005, must follow the guidelines of Subchapter B of this chapter.]~~

[SUBCHAPTER B]

[Minimum Standards for Fire Inspector Certification]

§429.201. Minimum Standards for Fire Inspector Personnel[–New Track.]

(a) Fire protection personnel of a governmental entity who are appointed to fire code enforcement duties must be certified, as a minimum, as a basic fire inspector as specified in §429.203 of this title (relating to Minimum Standards for Basic Fire Inspector Certification[–New Track]) within one year of initial appointment to such position.

(b) Prior to being appointed to fire code enforcement duties, all personnel must complete a Commission-approved basic fire inspection training program and successfully pass the Commission examination pertaining to that curriculum.

(c) Individuals holding any level of fire inspector certification shall be required to comply with the continuing education requirements in §441.13 of this title (relating to Continuing Education for Fire [Inspection Personnel]).

(d) Code enforcement is defined as the enforcement of laws, codes, and ordinances of the authority having jurisdiction pertaining to fire prevention.

§429.203. Minimum Standards for Basic Fire Inspector Certification[–New Track.]

In order to be certified as a basic fire inspector, an individual must:

- (1) possess valid documentation of accreditation from the International Fire Service Accreditation Congress as an Inspector I, Inspector II, and Plans Examiner I; or
- (2) complete a Commission-approved Basic Fire Inspector program and successfully pass the Commission examination(s) as specified in Chapter 439 of this title (relating to Examinations for Certification). An approved basic fire inspection training program shall consist of one or any combination of the following:
 - (A) completion of the Commission-approved Basic Fire Inspector Curriculum, as specified in Chapter 4 of the Commission's Certification Curriculum Manual; or
 - (B) successful completion of an out-of-state, NFA, and/or military training program which has been submitted to the Commission for evaluation and found to meet the minimum requirements as listed in the Commission-approved Basic Fire Inspector Curriculum as specified in Chapter 4 of the Commission's Certification Curriculum Manual; or
 - (C) successful completion of the following college courses:
 - (i) Fire Protection Systems, three semester hours;
 - (ii) Fire Prevention, three semester hours; or Fire Prevention Codes and Inspections, three semester hours;
 - (iii) Building Code, three semester hours;

- (iv) Building Construction, three semester hours;
- (v) Hazardous Materials, three semester hours. (Total semester hours, 15*. NOTE: Building Code and Building Construction may be combined into a single three-semester hour class. If this is the case, the total semester hours may be reduced to 12. Hazardous Materials I or II may be used to satisfy the requirements of Hazardous Materials).

§429.205. Minimum Standards for Intermediate Fire Inspector Certification[~~—New Track.~~]

Applicants for Intermediate Fire Inspector certification holding a prerequisite Basic Fire Inspector certification as defined in §429.203 of this title (relating to Minimum Standards for Basic Fire Inspector Certification [~~—New Track.~~]) must have acquired four (4) years experience appointed as a fire inspector.

§429.207. Minimum Standards for Advanced Fire Inspector Certification[~~—New Track.~~]

Applicants for Advanced Fire Inspector Certification must complete the following requirements:

- (1) hold as a prerequisite an Intermediate Fire Inspector certification as defined in §429.205 of this title (relating to Minimum Standards for Intermediate Fire Inspector Certification[~~—New Track.~~]);
- (2) acquire as a minimum eight (8) years experience appointed as a fire inspector; and
- (3) show successful completion of Fire Inspector III and Plans Examiner II courses meeting the applicable job performance requirements as identified in NFPA 1031, Professional Qualifications for Fire Inspector and Plan Examiner.

§429.209. Minimum Standards for Master Fire Inspector Certification[~~—New Track.~~]

(a) Applicants for Master Fire Inspector Certification must complete the following requirements:

- (1) hold as a prerequisite an Advanced Fire Inspector certification as defined in §429.207 of this title (relating to Minimum Standards for Advanced Fire Inspector Certification[~~—New Track.~~]); and
- (2) acquire a minimum of 12 years experience appointed as a fire inspector, and 60 college semester hours or an associate degree, which includes at least 18 college semester hours in fire science subjects.

(b) College level courses from both the upper and lower division may be used to satisfy the education requirement for Master Fire Inspector Certification.

§429.211. International Fire Service Accreditation Congress (IFSAAC) Seal[~~—New Track.~~]

(a) Individuals who hold commission Fire Inspector certification prior to January 1, 2005, may be granted International Fire Service Accreditation Congress (IFSAAC) seals for Inspector I

and Inspector II by making application to the commission for the IFSAC seals and paying applicable fees.

(b) Individuals who hold commission Fire Inspector certification prior to January 1, 2005, may apply to test for Plan Examiner I. Upon successful completion of the examination an IFSAC seal for Plan Examiner I may be granted by making application to the commission for the IFSAC seal and paying the applicable fee.

~~[(c) Individuals who pass the applicable state examination prior to January 1, 2005, may be granted IFSAC seals for Inspector I and Inspector II by making application to the commission for the IFSAC seals and paying applicable fees.]~~

~~[(d) Individuals who pass the applicable state examination prior to January 1, 2005, may apply to test for Plan Examiner I. Upon successful completion of the examination an IFSAC seal for Plan Examiner I may be granted by making application to the commission for the IFSAC seal and paying the applicable fee.]~~

(c)(e) Individuals who pass the applicable section of the state examination on or after January 1, 2005, may be granted IFSAC seal(s) for Inspector I, Inspector II, and/or Plan Examiner I by making application to the commission for the IFSAC seal(s) and paying the applicable fees, provided they meet the following provisions:

- (1) To receive the IFSAC Inspector I seal, the individual must:
 - (A) complete the Inspector I section of a commission-approved course; and
 - (B) pass the Inspector I section of a commission examination.
- (2) To receive the IFSAC Inspector II seal, the individual must:
 - (A) complete the Inspector II section of a commission-approved course;
 - (B) document possession of an IFSAC Inspector I seal; and
 - (C) pass the Inspector II section of a commission examination.
- (3) To receive the IFSAC Plan Examiner I seal, the individual must:
 - (A) complete the Plan Examiner I section of a commission-approved course; and
 - (B) pass the Plan Examiner I section of a commission examination.

9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including but not limited to:

B. Discussion and possible action on proposed amendments, new sections, repeals, and rule reviews as follows:

3. Proposed amendments to 37 TAC, Chapter 435, Fire Fighter Safety, including, but not limited to §435.1(d) (e) Protective Clothing; and §435.27, Live Fire Training Evolutions.

Chapter 435

FIRE FIGHTER SAFETY

§435.1. Protective Clothing.

- (a) A regulated fire department shall:
- (1) purchase, provide, and maintain a complete set of protective clothing for all fire protection personnel who would be exposed to hazardous conditions from fire or other emergencies or where the potential for such exposure exists. A complete set of protective clothing shall consist of garments including bunker coats, bunker pants, boots, gloves, helmets, and protective hoods, worn by fire protection personnel in the course of performing fire-fighting operations;
 - (2) ensure that all protective clothing which are used by fire protection personnel assigned to fire suppression duties comply with the minimum standards of the National Fire Protection Association suitable for the tasks the individual is expected to perform. The National Fire Protection Association standard applicable to protective clothing is the standard in effect at the time the entity contracts for new, rebuilt, or used protective clothing; and
 - (3) maintain and provide upon request by the Commission, a departmental standard operating procedure regarding the use, selection, care, and maintenance of protective clothing which complies with NFPA 1851, Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles.
- (b) An entity may continue to use protective clothing in use or contracted for before a change in the National Fire Protection Association standard, unless the Commission determines that the protective clothing constitutes an undue risk to the wearer, in which case the Commission shall order that the use be discontinued and shall set an appropriate date for compliance with the revised standard.
- (c) Protective clothing in use or contracted for prior to January 1, 2002, shall be exempted from the record keeping requirements contained in Section 2.3, Records, of NFPA 1851.

~~[(d) In accordance with §419.043, Texas Government Code and subsection (b) of this section as set out hereinabove and consistent with past practice with respect to the implementation of NFPA standards when immediate implementation of a standard as written is impractical for Texas, the modifications contained in Sections 10.1.2, 10.1.3, and 10.1.3.1 of the 2008 Edition of NFPA 1851 (effective June 24, 2007) shall be implemented as follows:]~~

~~[(1) with respect to Section 10.1.2, structural fire fighting ensembles and ensemble elements shall be retired in accordance with Section 10.2.1 of the 2008 Edition of NFPA 1851, no more than 12 years from the date the ensembles or ensemble elements were manufactured, or no more than 10 years from the date the ensemble or ensemble elements were first put into service;]~~

~~[(2) with respect to Section 10.1.3, proximity fire fighting ensembles and ensemble elements shall be retired in accordance with Section 10.2.1 of the 2008 Edition of NFPA 1851, no more than 12 years from the date the ensembles or ensemble elements were manufactured, or no more than ten years from the date the ensemble or ensemble elements were first put into service; and]~~

~~[(3) with respect to Section 10.1.3.1, the radiant reflective outer shells shall be retired in accordance with Section 10.2.1 of the 2008 Edition of NFPA 1851, no more than 7 years from the date the outer shells are manufactured or no more than 5 years from the date the outer shells were first put into service.]~~

~~[(e) Subsections (d) and (e) of this section will expire March 1, 2011.]~~

§435.3. Self-Contained Breathing Apparatus.

The employing entity shall:

- (1) purchase, provide, and maintain a complete self-contained breathing apparatus for each on-duty fire protection personnel who engage in operations where IDLH atmospheres may be encountered, where the atmosphere is unknown or would be exposed to hazardous atmospheres from fire or other emergencies or where the potential for such exposure exists;
- (2) ensure that all self-contained breathing apparatus used by fire protection personnel complies with the minimum standards of the National Fire Protection Association identified in NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire Fighters.
 - (A) the National Fire Protection Association standard applicable to a self-contained breathing apparatus is the standard in effect at the time the entity contracts for new, rebuilt, or used self-contained breathing apparatus;
 - (B) an entity may continue to use a self-contained breathing apparatus in use or contracted for before a change in the National Fire Protection Association standard, unless the Commission determines that the continued use of the self-contained breathing apparatus constitutes an undue risk to the wearer, in which case the Commission shall order that the use be discontinued and shall set an appropriate date for compliance with the revised standard;
- (3) develop an air quality program that complies with the most recent edition of the NFPA 1989 Standard on Breathing Air Quality for Emergency Services Respiratory Protection;
- (4) maintain and supply upon request by the Commission, records and reports documenting compliance with Commission requirements concerning self-contained breathing apparatus and breathing air. Records of all tests shall be made and the records shall be retained for a period of no less than three years;
- (5) maintain and provide upon request by the Commission, a departmental standard operating procedure regarding the use of self-contained breathing apparatus; and
- (6) maintain and provide upon request by the Commission, a department standard operating procedure regarding the selection, care, and maintenance of self-contained breathing apparatus that complies with the most recent edition of the NFPA 1852 Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA).

§435.5. Commission Recommendations.

The commission recommends that all employing entities use as a guide the following publications:

- (1) NFPA 1403 "Live Fire Training Evolutions";
- (2) NFPA 1500 "Fire Department Occupational Safety and Health Program;"
- (3) IAFF/IAFC - "Fire Service Joint Labor Management Wellness-Fitness Initiative."

§435.7. Fire Department Staffing Studies.

- (a) Section 419.022(a)(4) Texas Government Code provides that the commission may "on request, assist in performing staffing studies of fire departments." Staffing studies must take into consideration all the objectives and missions of the fire department. The commission does not have the resources or the staff to directly assist in performing the necessary tasks to perform a staffing study. Many staffing studies have been developed that can be used to assist in evaluating the needs of a fire department.
- (b) A city should ultimately decide on the level of fire protection it is willing to provide to its citizens. The city and fire department should, as a minimum, address the needs of prevention, investigation and suppression as outlined in the appropriate NFPA Standards. That decision should be based on facts, the safety of its citizens, and the safety of the fire fighters providing that protection.
- (c) The commission will assist by maintaining information pertinent to fire department staffing. The information shall be

maintained in the Ernest A. Emerson Fire Protection Resource Library at the Texas Commission on Fire Protection. Copies shall be made available, free of charge, to anyone requesting such information to the extent permitted by copyright laws.

§435.9. Personal Alert Safety System (PASS).

The employing entity shall:

- (1) purchase, provide, and maintain a PASS device for each on duty fire protection personnel who engage in operations where IDLH atmospheres may be encountered, or where the atmosphere is unknown, or where hazardous conditions from fire or other emergencies exist, or where the potential for such exposure exists;
- (2) ensure that all PASS devices used by fire protection personnel comply with the minimum standards of the National Fire Protection Association identified in NFPA 1982, Standard on Personal Alert Safety Systems (PASS) for Fire Fighters:
 - (A) the National Fire Protection Association standard applicable to a PASS device is the standard in effect at the time the entity contracts for new, rebuilt, or used PASS devices;
 - (B) an entity may continue to use a PASS device that meets the requirements of an earlier edition of NFPA 1982, unless the commission determines that the continued use of the PASS device constitutes an undue risk to the wearer, in which case the commission shall order that the use be discontinued and shall set an appropriate date for compliance with the revised standard;
- (3) ensure that the PASS device assigned to an individual user be inspected at the beginning of each duty period and before each use.
- (4) maintain and provide upon request by the commission, a departmental standard operating procedure regarding the proper use, selection, care and maintenance of PASS devices.

§435.11. Incident Management System (IMS)

- (a) The fire department shall develop, maintain and use an incident management system.
- (b) The incident management system shall:
 - (1) include a written operating procedure for the management of emergency incidents;
 - (2) require that the IMS be used at all emergency incidents;
 - (3) require operations to be conducted in a manner that recognizes hazards and assists in the prevention of accidents and injuries;
 - (4) require that all fire protection personnel be trained in the use of the IMS; and
 - (5) require that the IMS be applied to all drills, exercises and all other situations that involve hazards similar to those encountered at an actual emergency.
- (c) The IMS shall meet the requirements of the applicable sections of the National Fire Protection Association 1561, Standard on Fire Department Incident Management System.
- (d) The Commission recommends departments follow the National Incident Management System (NIMS) when developing their incident management system.

§435.13. Personnel Accountability System.

- (a) The fire department shall develop, maintain and use a personnel accountability system that provides for a rapid accounting of all personnel at an emergency incident.
- (b) The accountability system shall:
 - (1) require all fire protection personnel be trained in the use of the accountability system;
 - (2) require that the fire protection personnel accountability system be used at all incidents;
 - (3) require that all fire protection personnel operating at an emergency incident to actively participate in the personnel accountability system; and
 - (4) require that the incident commander be responsible for the overall personnel accountability system for the incident.
- (c) The fire department shall be responsible for developing the system components required to make the personnel accountability system effective.
- (d) The personnel accountability system shall meet the minimum standards required by the National Fire Protection Association 1561, Standard on Fire Department Incident Management System. If the standard is revised, the fire department shall have one (1) year from the effective date of the new standard to comply.

§435.15. Operating At Emergency Incidents.

- (a) The fire department shall develop, maintain and use a standard operating procedure for fire protection personnel operating at emergency incidents.
- (b) The standard operating procedure shall:
 - (1) specify an adequate number of personnel to safely conduct emergency scene operations;
 - (2) limit operations to those that can be safely performed by personnel at the scene;
 - (3) require all personnel to be trained in and use the standard operating procedures; and
 - (4) comply with §435.17 (Procedures for Interior Structural Fire Fighting).
- (c) The fire department may use standards established by the National Fire Protection Association for fire protection personnel operating at an emergency incident.

§435.17. Procedures for Interior Structural Fire Fighting (2-In/2-Out Rule).

- (a) The fire department shall develop written procedures that comply with the Occupational Safety and Health Administration's Final Rule, 29 CFR Section 1910.134(g)(4) by requiring:
 - (1) a team of at least four fire protection personnel must be assembled before an interior fire attack can be made when the fire has progressed beyond the incipient stage;
 - (2) at least two fire protection personnel to enter the IDLH atmosphere and remain in visual or voice (not radio) contact with each other;

- (A) Visual means that the fire protection personnel must be close enough to see each other.
 - (B) Voice means that the fire protection personnel of the entry team must be close enough to speak to one another without the use of radios.
- (3) at least two fire protection personnel remain located outside the IDLH atmosphere to perform rescue of the fire protection personnel inside the IDLH atmosphere;
 - (4) all fire protection personnel engaged in interior structural fire fighting use self-contained breathing apparatus and be clothed in a complete set of protective clothing as identified in Chapter 435;
 - (5) all fire protection personnel located outside the IDLH atmosphere be equipped with appropriate retrieval equipment where retrieval equipment would contribute to the rescue of the fire protection personnel that have entered the IDLH atmosphere;
 - (6) one of the outside fire protection personnel must actively monitor the status of the inside fire protection personnel and not be assigned other duties. The second outside fire protection personnel may be assigned to an additional role, including, but not limited to, incident commander, safety officer, driver-operator, command technician or aide, or fire fighter/EMS personnel, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any fire protection personnel working at the scene;
 - (7) the fire protection personnel outside the IDLH atmosphere must remain in communication (including, but not limited to, radio) with the fire protection personnel in the IDLH atmosphere. Use of a signal line (rope) as a communications instrument for interior fire fighting is not permitted by the commission. This does not preclude the use of rescue guide ropes (guide line or lifeline or by what ever name they may be called) used during structural searches; and
 - (8) each outside fire protection personnel must have a complete set of protective clothing and self-contained breathing apparatus, as identified in Chapter 435, immediately accessible for use if the need for rescue activities inside the IDLH atmosphere is necessary.
- (b) The fire department shall comply with the 2-in/2-out rule as described in this section except in an imminent life-threatening situation when immediate action could prevent the loss of life or serious injury before the team of four fire protection personnel are assembled.

§435.19. Enforcement of Commission Rules.

- (a) The Commission shall enforce all Commission rules at any time, including, but not limited to, Commission investigations, fire department inspections, or upon receiving a written complaint from an identified person or entity of an alleged infraction of a Commission rule.
- (b) The Commission shall not provide prior notification of an inspection to a fire department.
- (c) Upon receipt of a signed complaint alleging a violation of a Commission rule, the Commission shall have 30 days to initiate an investigation and report back to the complainant its progress.
- (d) Upon substantiating the validity of a written complaint, the Commission shall follow the procedures outlined in Government Code, Chapter 419, §419.011(b) and (c).

§435.21. Fire Service Joint Labor Management Wellness-Fitness Initiative.

- (a) A fire department shall assess the wellness and fitness needs of the personnel in the department. The procedure used to make this assessment shall be written and made available for commission inspection.

- (b) A fire department shall develop and maintain a standard operating procedure to address those needs.
- (c) The approach to the fitness needs of the department shall be based on the local assessment and local resources.
- (d) The standard operating procedure shall be made available to the commission for inspection.

§435.23. Fire Fighter Injuries.

- (a) A fire department shall report all Texas Workers' Compensation Commission reportable injuries that occur to on-duty regulated fire protection personnel on the Commission form.
- (b) Minor injuries are those injuries that do not result in the fire fighter missing more than one duty period or does not involve the failure of personal protective equipment. Minor injuries shall be reported within 30 business days of the injury event.
- (c) Major injuries are those that require the fire fighter to miss more than one duty period. Major injuries shall be reported within five business days of the injury event.
- (d) Investigatable injuries are those resulting from the malfunction of personal protective equipment, failure of personal protective equipment to protect the fire fighter from injury, or injuries sustained from failure to comply with any provision of Commission mandated department SOPs. Investigatable injuries shall be reported within five business days of the injury event.
- (e) The regulated entity shall secure any personal protective equipment involved in a fire fighter injury and shall be made available to the Commission for inspection.

§435.25. Courage to be Safe So Everyone Goes Home Program.

- (a) In an effort to improve firefighter safety in the State of Texas, all regulated entities will ensure that the National Fallen Firefighters Foundation's "Courage to be Safe So Everyone Goes Home" program be completed as part of the continuing education required for certified fire protection personnel by December 1, 2015. Individuals will be credited with four hours of continuing education credit for completing this program.
- (b) All regulated fire protection personnel must complete the National Fallen Firefighters Foundation's "Courage to be Safe So Everyone Goes Home" program prior to December 1, 2015.
- (c) All fire protection personnel appointed after December 1, 2015 will be required to complete the National Fallen Firefighters Foundation's "Courage to be Safe So Everyone Goes Home" program training within one year of appointment to a fire department.
- (d) Departments will report the completion of training through the Commission web based reporting system.
- (e) Failure to complete the National Fallen Firefighters Foundation's "Courage to be Safe So Everyone Goes Home" program before the required deadlines will be considered a violation of continuing education rules found in Chapter 441 of the Commission's Standards Manual.

§435.27. Live Fire Training Evolutions.

The most current edition of NFPA 1403, Standard on Live Fire Training Evolutions, shall be used as a guide when developing standard operating procedures for conducting live fire training. The following requirements shall apply for all Live Fire Training Evolutions conducted.

- (1) The officer in charge or instructor will insure that the water supply rate and duration for each individual Live Fire Training Evolution is adequate to control and extinguish the training fire, the supplies necessary for backup lines to protect personnel, and any water needed to protect exposed property.**
- (2) The officer in charge or instructor will insure that the buildings or props being utilized for live fire training are in a condition that would not pose an undue safety risk.**

- (3) A safety officer shall be appointed for all Live Fire Training Evolutions. The safety officer shall have the authority, regardless of rank, to alter, suspend or control any aspect of the operations when, in his or her judgment, a potential or actual danger, accident, or unsafe condition exists. The safety officer shall not be assigned other duties that interfere with safety responsibilities.
- (4) No person(s) shall play the role of a victim inside the building. .
- (5) Prior to the ignition of any fire, instructors shall insure that all personal protective clothing and/or self-contained breathing apparatus are NFPA compliant and being worn in the proper manner.
- 6) Prior to conducting any live fire training, a pre-burn briefing session shall be conducted. All participants shall be required to conduct a walk-through of the structure in order to have a knowledge of, and familiarity with, the layout of the building and to be able to facilitate any necessary evacuation of the building.
- (7) A standard operating procedure shall be developed and utilized for Live Fire Training Evolutions. The standard operating procedure shall include, but not be limited to:
- (A) a Personal Alert Safety System (PASS). A PASS device shall be provided for all participating in live fire training and shall meet the requirements in §435.9 of this title (relating to PASS devices);
 - (B) a Personnel Accountability System that complies with §435.13 of this title shall be utilized;
 - (C) an Incident Management System;
 - (D) use of personal protective clothing and self-contained breathing apparatus;
 - (E) an evacuation signal and procedure; and pre-burn, burn and post-burn procedures.

- 9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including but not limited to:**
 - B. Discussion and possible action on proposed amendments, new sections, repeals, and rule reviews as follows:**
 - 4. Proposed amendments to 37 TAC, Chapter 437, Fees, including, but not limited to §437.7 (a) (b) Standards Manual and Certification Curriculum Manual Fees.**

Chapter 437

Fees

§437.7. Standards Manual and Certification Curriculum Manual [~~Fees~~].

- (a) **Current versions** [~~A current version~~] of the [~~Commission's~~] Standards Manual for Fire Protection Personnel and **Certification** [~~the~~] Curriculum Manual are available [~~for free~~] on the **commission's website**. [~~web site at www.tcfp.state.tx.us.~~]
- (b) The Commission does not provide printed copies of the manuals. A printed copy of the Commission's standards may be obtained from Thomson West, 610 Opperman Drive, Eagan, MN 55123, [~~(800) 328-9352~~], by requesting "Title 37, Public Safety and Corrections" of the Texas Administrative Code. The web address for Thomson West is www.west.thomson.com. [~~www.thomsonwest.com~~.]

- 9. Matters referred from the Fire Fighter Advisory Committee (FFAC), including but not limited to:**
- C. Discussion and possible action on recommendations from the Curriculum and Testing Committee with regard to the Fire Investigator Curriculum, HazMat Awareness and HazMat Operations reference lists.**

CERTIFICATION CURRICULUM MANUAL

CHAPTER FIVE

FIRE INVESTIGATOR

NFPA 1033 2009 Edition

Effective June 1, 2011



Texas Commission on Fire Protection
P.O. Box 2286 Austin, Texas 78768-2286 (512) 936-3838

RECOMMENDED REFERENCE LIST FOR THE FIRE INVESTIGATOR CURRICULUM

This Reference List is provided as a general guide for both instructors and students to locate information pertaining to the specific objectives in the TCFP Curriculum. This list is **not** all-inclusive and does not in any way limit TCFP development and use of questions to test the objectives of the curriculum:

Required References

Emergency Response Guidebook, (Current ed.) U.S. Department of Transportation Research and Special Programs Administration, Office of Hazardous Materials Initiatives and Training.

Fire Inspection and Code Enforcement (7th ed.) (2009). Stillwater, OK: Fire Protection Publications. International Fire Service Training Association.

Fire Investigator (2nd ed.) (2010). Stillwater OK: Fire Protection Publications. International Fire Service Training Association (IFSTA).

Fire Investigation, Clifton Park, NY. 2009. 1st edition. Delmar Publishing

~~Noll, Gregory G., et al., *Hazardous Materials: Managing the Incident.* (3rd ed.) (2005). Chester, MD: Red Hat Publishing Company Inc.~~

~~*Hazardous Materials Response Handbook.* (4th ed.) (2002). Quincy, MA: NFPA Publications. National Fire Protection Association.~~

NFPA 921: Guide for Fire and Explosion Investigations (2008 ed.) Quincy, MA: National Fire Protection Association. NFPA Publications.

NFPA 1033: Standard for Professional Qualifications for Fire Investigator (2009 ed.) Quincy, MA: National Fire Protection Association. NFPA Publications.

Rules of Criminal Evidence, latest edition. (On 02/01/11, this information was available online at <http://www.courts.state.tx.us/rules/tre-toc.asp>).

Texas Code of Criminal Procedure, latest edition. (On 02/01/11, this information was available online at <http://www.statutes.legis.state.tx.us/>).

Texas Commission on Fire Protection, *Fire Investigator Curriculum*.

Standards Manual for Fire Protection Personnel. Austin, TX: Texas Commission on Fire Protection.

Texas Family Code, latest edition. (On 02/01/11, this information was available online at <http://www.statutes.legis.state.tx.us/>).

Texas Insurance Code, latest edition. (On 02/01/11, this information was available online at <http://www.statutes.legis.state.tx.us/>).

Texas Penal Code, latest edition. (On 02/01/11, this information was available online at <http://www.statutes.legis.state.tx.us/>).

Texas Public Information Act Handbook, latest edition. (On 02/01/11, this information was available online at http://www.oag.state.tx.us/AG_publications/pdfs/publicinfo_hb.pdf. It is available through the Texas Attorney General's office.)

United States Code Annotated, latest edition. (On 02/01/11, this information was available online at <http://www.gpo.gov/fdys/>).

United States Constitution. (On 02/01/11, this information was available online at <http://www.archives.gov/exhibits/charters/charters.html>).

Recommended References

The most current edition of the following publications and media are recommended (not required) supplemental material for program use.

Texts

DeHaan, John D., *Kirk's Fire Investigation*, (6th ed.) (2006). Upper Saddle River, NJ: Brady/Prentice Hall.

Fire in Texas, Texas State Fire Marshals Office. Department of Insurance, TEXFIRS section.

NFPA 472: Standard for Professional Competence of Responders to Hazardous Materials Incidents (2008 ed.). Quincy, MA: National Fire Protection Association. NFPA Publications.

Factory Mutual Insurance – Fire Investigators Handbook

The VIN number book - Passenger Vehicle Identification Manual (2010, 81st edition) National Insurance Crime Bureau, 1111 E. Touhy Avenue, Suite 400, Des Plaines, IL 60018-2805

TX State FMO Lab submittal guide (Forensic Arson Laboratory Guidelines for Evidence) (<http://www.tdi.state.tx.us/fire/documents/fmlabguideline.pdf>)

US DOJ (Fire and Arson Scene Evidence)
(<http://www.ncjrs.gov/pdffiles1/nij/181584.pdf>)

Investigation of Motor Vehicles. 4th ed. Lee S. Cole. (Lee Books)

Instructor/Course Resource

- **NFPA User's Manual for NFPA 921,**

- Forensic Fire Scene Reconstruction (2nd Edition), David J. Icove & John D. DeHaan
- Along with all the other references on our curriculum list

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**CHAPTER FIVE
FIRE INVESTIGATOR
COURSE PHASE OUTLINE**

SECTION	SUBJECT	RECOMMENDED HOURS
PHASE I		
	Commission on Fire Protection Rules and Regulations	
500-3	Definitions	
500-4	Basic Methodology	2
500-5	Basic Fire Science	8
500-6	Fire Patterns	8
500-7	Building Systems	4
500-8	Electricity and Fire	8
500-9	Building Fuel Gas Systems	4
500-10	Fire-Related Human Behavior	2
	Total Recommended Hours	36
PHASE II		
500-11	Legal Considerations	8
500-12	Safety	2
500-13	Sources of Information	8
500-14	Planning the Investigation	2
500-15	Documentation of the Investigation	8
500-16	Physical Evidence	4
500-17	Origin Determination	8
	Total Recommended Hours	40
PHASE III		
500-18	Fire Cause Determination	4
500-19	Analyzing the Incident for Cause and Responsibility	8
500-20	Failure Analysis and Analytical Tools	8
500-21	Explosions	4
500-22	Incendiary Fires	8
500-23	Fire and Explosion Deaths and Injuries	4
	Total Recommended Hours	36
PHASE IV		
500-24	Appliances	2
500-25	Motor Vehicle Fires	8
500-26	Wildfire Investigations	3
500-27	Management of Complex Investigations	2
500-28	Marine Fire Investigations	3
	Practical Exercises*	20
	Total Recommended Hours	38
	TOTAL HOURS RECOMMENDED	150

* The recommended hours for skills evaluation is based on 12 students. Actual hours needed will depend on the number of students, the number of examiners, availability of equipment, and the student skill level.

Fire Investigator

A Fire Investigator is an individual who has demonstrated the knowledge, skills and abilities necessary to conduct, coordinate, and complete a fire investigation employing all the elements of the scientific method as the operating analytical process throughout the investigation. A Fire Investigator can competently determine the origin and cause of a fire and has mastered all the job performance requirements of NFPA 1033: Standard for Professional Qualifications for Fire Investigator.

SECTION 1

COMMISSION ON FIRE PROTECTION RULES AND REGULATIONS

4.1 General

NFPA 1033 4.1.1 The fire investigator shall meet the job performance requirements defined in Sections 4.2 through 4.7.

501-1.1 ***The Investigator candidate shall describe the purpose of the NFPA standard and guide applicable to Fire Investigators.***

- 1.1.1 NFPA 1033 *Standard for Professional Qualifications for Fire Investigator*, 2009 edition.
- 1.1.2 NFPA 921 *Guide for Fire and Explosion Investigations*, 2008 edition.

501-1.2 ***The Investigator candidate shall identify rules applicable to the Fire/Arson Investigator certification adopted by the Texas Commission on Fire Protection.***

- 1.2.1 The Investigator candidate shall identify the requirements for certification as a Fire Investigator as stated in the *Standards Manual for Fire Protection Personnel*, Chapter 5.
- 1.2.2 The Investigator candidate shall identify the requirements for certification as an Arson Investigator as stated in the *Standards Manual for Fire Protection Personnel*, Chapter 5.
- 1.2.3 The Investigator candidate shall identify the various levels of certification for Fire and/or Arson Investigator,

as stated in the *Standards Manual for Fire Protection Personnel*.

- 1.2.3.1 Basic
- 1.2.3.2 Intermediate
- 1.2.3.3 Advanced
- 1.2.3.4 Master

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SECTION 2

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SECTION 3

DEFINITIONS

501-3.1 ***The Investigator candidate shall define the terms used in Chapter 3 of NFPA 921, Guide for Fire and Explosion Investigation (2008 Edition).***

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SECTION 4

BASIC METHODOLOGY

4.1 General

NFPA 1033 4.1.2 The fire investigator shall employ all elements of the scientific method as the operating analytical process throughout the investigation and for the drawing of conclusions.

501-4.1 ***The Investigator candidate shall identify the need for following a systematic approach to fire investigation.***

501-4.2 ***The Investigator candidate shall describe the nature of fire investigations, utilizing the systematic approach of the scientific method.***

501-4.3 ***The Investigator candidate shall describe the steps of the scientific method relating to fire investigations.***

- 4.3.1 Recognize the need
- 4.3.2 Define the problem
- 4.3.3 Collect data
- 4.3.4 Analyze the data
- 4.3.5 Developing a hypothesis (inductive reasoning)
- 4.3.6 Test the hypothesis (deductive reasoning)
- 4.3.7 Avoid presumption
- 4.3.8 Expectation bias

501-4.4 ***The Investigator candidate shall describe basic method of a fire investigation.***

- 4.4.1 Receiving the assignment
- 4.4.2 Preparing for the investigation
- 4.4.3 Conducting the investigation
- 4.4.4 Collecting and preserving evidence

4.4.5 Analyzing the incident

4.4.6 Conclusions

501-4.5 ***The Investigator candidate shall follow the proper reporting procedures established by their respective jurisdiction.***

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SECTION 5

BASIC FIRE SCIENCE

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.4 Interpret fire patterns, given standard equipment and tools and some structural or content remains, so that each individual pattern is evaluated with respect to the burning characteristics of the material involved.

(A) Requisite Knowledge. Fire dynamics, fire development, and the interrelationship of heat release rate, form, and ignitability of materials.

(B) Requisite Skills. Interpret the effects of burning characteristics on different types of materials.

NFPA 1033 4.2.5 Interpret and analyze fire patterns, given standard equipment and tools and some structural or content remains, so that fire development is determined, methods and effects of suppression are evaluated, false origin area patterns are recognized, and all areas of origin are correctly identified.

(A) Requisite Knowledge. Fire behavior and spread based on fire chemistry, fire dynamics, and physics, fire suppression effects, building construction.

(B) Requisite Skills. Interpret variations of fire patterns on different materials with consideration given to heat release rate, form, and ignitability; distinguish impact of different types of fuel loads; evaluate fuel trails; and analyze and synthesize information.

NFPA 1033 4.2.6 Examine and remove fire debris, given standard equipment and tools, so that all debris is checked for fire cause evidence, potential ignition source(s) is identified, and evidence is preserved without investigator-inflicted damage or contamination.

(A) Requisite Knowledge. Basic understanding of ignition processes, characteristics of ignition sources, and ease of ignition of fuels; debris-layering techniques; use of tools and equipment during the debris search; types of fire cause evidence commonly found in various degrees of damage; and evidence-gathering methods and documentation.

(B) Requisite Skills. Employ search techniques that further the discovery of fire cause evidence and ignition sources, use search techniques that incorporate documentation, and collect and preserve evidence.

501-5.1 **The Investigator candidate shall define and describe fire theory.**

5.1.1 General

5.1.2 Identify and describe the elements of the “fire tetrahedron.”

5.1.2.1 Define “fuel” and describe the three phases in which fuel exists.

- 5.1.2.1.1 Solid
- 5.1.2.1.2 Liquid
- 5.1.2.1.3 Gas
- 5.1.2.2 Describe the action of oxidizing agents.
- 5.1.2.3 Describe the relationship of heat in the combustion process.
- 5.1.2.4 Describe the uninhibited chemical chain reaction of combustion and identify the two mechanisms by which combustion of solids can occur.

501-5.2 ***The Investigator candidate shall be able to discuss fire chemistry as the study of chemical processes that occur in fires, including changes of state, decomposition, and combustion.***

- 5.2.1 General
- 5.2.2 The Investigator candidate shall define and describe phase changes and thermal decomposition.
- 5.2.3 The Investigator candidate shall describe combustion reactions, premixed burning, diffusion flames, and transactions from premixed burning to diffusion flame burning.

501-5.3 ***The Investigator candidate shall identify and describe products of combustion.***

501-5.4 ***The Investigator candidate shall identify and describe fluid flows generated by mechanical forces or by buoyant forces generated by temperature differences.***

- 5.4.1 General
- 5.4.2 Buoyant flows
- 5.4.3 Fire plumes
- 5.4.4 Ceiling jets
- 5.4.5 Vent flows

501-5.5 ***The Investigator candidate shall define and describe methods of "heat transfer."***

- 5.5.1 General
- 5.5.2 Conduction
- 5.5.3 Convection
- 5.5.4 Radiation

501-5.6 ***The Investigator candidate shall define and describe the fuel load, fuel packages, and properties of flame.***

- 5.6.1 Fuel load
- 5.6.2 Fuel items and fuel package
- 5.6.3 Heat release rate
- 5.6.4 Properties of flames
- 5.6.5 Thermal structure of a flame.
 - 5.6.5.1 Continuous flaming region
 - 5.6.5.2 Intermittent flame region
 - 5.6.5.3 Plume region
- 5.6.6 Heat fluxes from flames
 - 5.6.6.1 Heat fluxes from flames to contacted surfaces
 - 5.6.6.1.1 Walls
 - 5.6.6.1.2 Ceilings
 - 5.6.6.2 Heat fluxes from flames to remote surfaces

501-5.7 ***The Investigator candidate shall describe the different forms and mechanisms of ignition.***

- 5.7.1 Ignition in general
- 5.7.2 Ignition of flammable gases
- 5.7.3 Ignition of liquids
- 5.7.4 Ignition of solids

501-5.8 ***The Investigator candidate shall describe the different flame spreads and their characteristics.***

- 5.8.1 General
 - 5.8.1.1 Counterflow flame spread
 - 5.8.1.2 Concurrent flame spread
 - 5.8.1.3 Fire spread on sloped surfaces
- 5.8.2 Flame spread on liquids
- 5.8.3 Flame spread on solids

501-5.9 ***The Investigator candidate shall describe the different methods of fire spread in a compartment.***

501-5.10 ***The Investigator candidate shall describe compartment fire development.***

- 5.10.1 General
- 5.10.2 Compartment fire phenomena
- 5.10.3 Compartment vent flows
- 5.10.4 Flashover
- 5.10.5 Fully developed compartment fires
- 5.10.6 Effects of enclosures on fire growth
 - 5.10.6.1 Room volume and ceiling height
 - 5.10.6.2 Location of the fire in the compartment

501-5.11 ***The Investigator candidate shall identify fire spread between compartments.***

- 5.11.1 Fire spread via openings
- 5.11.2 Fire spread via barriers

501-5.12 ***The Investigator candidate shall describe the paths of smoke spread in buildings.***

SECTION 6

FIRE PATTERNS

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.4 Interpret fire patterns, given standard equipment and tools and some structural or content remains, so that each individual pattern is evaluated with respect to the burning characteristics of the material involved.

(A) Requisite Knowledge. Fire dynamics, fire development, and the interrelationship of heat release rate, form, and ignitibility of materials.

(B) Requisite Skills. Interpret the effects of burning characteristics on different types of materials.

NFPA 1033 4.2.5 Interpret and analyze fire patterns, given standard equipment and tools and some structural or content remains, so that fire development is determined, methods and effects of suppression are evaluated, false origin area patterns are recognized, and all areas of origin are correctly identified.

(A) Requisite Knowledge. Fire behavior and spread based on fire chemistry, fire dynamics, and physics, fire suppression effects, building construction.

(B) Requisite Skills. Interpret variations of fire patterns on different materials with consideration given to heat release rate, form, and ignitibility; distinguish impact of different types of fuel loads; evaluate fuel trails; and analyze and synthesize information.

NFPA 1033 4.2.7 Reconstruct the area of origin, given standard and, if needed, special equipment and tools as well as sufficient personnel, so that all protected areas and fire patterns are identified and correlated to contents or structural remains, items potentially critical to cause determination and photo documentation are returned to their prefire location, and the area(s) or point(s) of origin is discovered.

(A) Requisite Knowledge. The effects of fire on different types of material and the importance and uses of reconstruction.

(B) Requisite Skills. Examine all materials to determine the effects of fire, identify and distinguish among different types of fire-damaged contents, and return materials to their original position using protected areas and fire patterns.

501-6.1 ***The Investigator candidate shall define fire patterns.***

501-6.2 ***The Investigator candidate shall be able to identify fire effects***

6.2.1 Identify fire patterns

6.2.2 Temperature estimation using fire effects

6.2.3 Mass loss of material

- 6.2.4 Char
 - 6.2.4.1 Introduction
 - 6.2.4.2 Surface effect of char
 - 6.2.4.3 Appearance of char
 - 6.2.4.4 Rate of wood charring
 - 6.2.4.5 Depth of char
 - 6.2.4.6 Nature of char
- 6.2.5 Spalling
- 6.2.6 Oxidation
- 6.2.7 Color changes
- 6.2.8 Melting of materials
- 6.2.9 Thermal expansion and deformation of materials
- 6.2.10 Deposition of smoke on surfaces
- 6.2.11 Clean burn
- 6.2.12 Calcination
- 6.2.13 Window glass
 - 6.2.13.1 Breaking of glass
 - 6.2.13.2 Tempered glass
 - 6.2.13.3 Staining of glass
- 6.2.14 Collapsed furniture springs
- 6.2.15 Distorted light bulbs
- 6.2.16 Rainbow effect
- 6.2.17 Victim injuries

501-6.3 ***The Investigator candidate shall be able to identify the following fire patterns.***

- 6.3.1 Introduction
 - 6.3.1.1 Dynamics of pattern production
 - 6.3.1.2 Lines or areas of demarcation
- 6.3.2 Causes of fire patterns

- 6.3.2.1 Plume-generated patterns
- 6.3.2.2 Ventilation-generated patterns
- 6.3.2.3 Hot gas layer-generated patterns
- 6.3.2.4 Full room involvement-generated patterns
- 6.3.2.5 Suppression-generated patterns

- 6.3.3 Locations of patterns

- 6.3.4 Location of objects
 - 6.3.4.1 Heat shadowing
 - 6.3.4.2 Protected areas

- 6.3.5 Penetrations of horizontal surfaces

- 6.3.6 Depth of char patterns with fuel gases

- 6.3.7 Pattern geometry

501-6.4 ***The Investigator candidate shall be able to identify the two fire patterns.***

- 6.4.1 Types of fire patterns
 - 6.4.1.1 Fire spread (movement) patterns
 - 6.4.1.2 Heat (intensity) patterns

SECTION 7

BUILDING SYSTEMS

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.5 Interpret and analyze fire patterns, given standard equipment and tools and some structural or content remains, so that fire development is determined, methods and effects of suppression are evaluated, false origin area patterns are recognized, and all areas of origin are correctly identified.

(A) Requisite Knowledge. Fire behavior and spread based on fire chemistry, fire dynamics, and physics, fire suppression effects, building construction.

(B) Requisite Skills. Interpret variations of fire patterns on different materials with consideration given to heat release rate, form, and ignitability; distinguish impact of different types of fuel loads; evaluate fuel trails; and analyze and synthesize information.

NFPA 1033 4.2.8 Inspect the performance of building systems, including detection, suppression, HVAC, utilities, and building compartmentation, given standard and special equipment and tools, so that a determination can be made as to the need for expert resources, an operating system's impact on fire growth and spread is considered in identifying origin areas, defeated and/or failed systems are identified, and the system's potential as a fire cause is recognized.

(A) Requisite Knowledge. Different types of detection, suppression, HVAC, utility, and building compartmentation such as fire walls and fire doors; types of expert resources for building systems; the impact of fire on various systems; common methods used to defeat a system's functional capability; and types of failures.

(B) Requisite Skills. Determine the system's operation and its effect on the fire; identify alterations to, and failure indicators of, building systems; and evaluate the impact of suppression efforts on building systems.

501-7.1 **The Investigator candidate shall understand the reaction of buildings and building assemblies to fire.**

501-7.2 **The Investigator candidate shall understand the features of design, construction and structural elements in evaluating fire development.**

7.2.1 General

7.2.2 Building design

7.2.2.1 General

7.2.2.2 Building loads

7.2.2.3 Room size

7.2.2.4 Compartmentation

- 7.2.2.5 Concealed and interstitial spaces
- 7.2.2.6 Planned designs as compared to as built conditions
- 7.2.3 Materials
 - 7.2.3.1 Ignitability
 - 7.2.3.2 Flammability
 - 7.2.3.3 Thermal inertia
 - 7.2.3.4 Thermal conductivity
 - 7.2.3.5 Toxicity
 - 7.2.3.6 Physical state and heat resistance
 - 7.2.3.7 Orientation, position and placement
- 7.2.4 Occupancy
- 7.2.5 Computer fire model survey of building component variations
- 7.2.6 Explosion damage

501-7.3

The Investigator candidate shall identify the different types of building construction.

- 7.3.1 General
 - 7.3.1.1 Type I – fire resistive
 - 7.3.1.2 Type II – non-combustible
 - 7.3.1.3 Type III – ordinary
 - 7.3.1.4 Type IV – heavy timber
 - 7.3.1.5 Type V – wood frame
- 7.3.2 Wood Frame
 - 7.3.2.1 Platform frame construction
 - 7.3.2.2 Balloon frame
 - 7.3.2.3 Plank and beam
 - 7.3.2.4 Post and frame
 - 7.3.2.5 Heavy timber
 - 7.3.2.6 Alternative residential construction
 - 7.3.2.6.1 Manufactured homes
 - 7.3.2.6.2 Modular homes
 - 7.3.2.6.3 Steel frame residential construction
 - 7.3.2.7 Manufactured wood structural elements
- 7.3.3 Ordinary construction

- 7.3.4 Mill construction
- 7.3.5 Non-combustible construction
 - 7.3.5.1 General
 - 7.3.5.2 Metal construction
 - 7.3.5.3 Concrete or masonry construction

501-7.4 ***The Investigator candidate shall identify the different construction assemblies.***

- 7.4.1 General
- 7.4.2 Floor/ceiling/roof assemblies
- 7.4.3 Walls
- 7.4.4 Doors
- 7.4.5 Concealed spaces

****Note****

The following Section is not contained in NFPA 921, *Guide for Fire and Explosion Investigation*. The reference for this material is found in IFSTA, *Fire Inspection and Code Enforcement*.

501-7.5 ***The Investigator candidate shall describe the types and characteristics of automatic sprinkler systems.***

- 1) Identify various types of automatic sprinkler systems
 - a) Wet pipe
 - b) Dry pipe
 - c) Pre-action
 - d) Deluge
 - e) Residential
- 2) Identify reasons for unsatisfactory performance of an automatic sprinkler system.
- 3) Describe fire sprinkler components and operations.

501-7.6 ***The Investigator candidate shall describe the types, operations, capabilities and the effects of proper application of "special agent" fire extinguishing systems.***

- 1) Dry chemical

- 2) Wet chemical
- 3) Halogenated agent
- 4) Carbon dioxide
- 5) Foam
- 6) Gaseous agent

501-7.7 ***The Investigator candidate shall identify the classes and capabilities of standpipe and hose systems.***

- 1) Class I systems
- 2) Class II systems
- 3) Class III systems

501-7.8 ***The Investigator candidate shall identify alarm-initiating devices.***

- 1) Local system
- 2) Auxiliary system
- 3) Remote station
- 4) Proprietary system
- 5) Central station system

501-7.9 ***The Investigator candidate shall identify fire detection systems.***

- 1) Smoke
- 2) Flame
- 3) Heat
- 4) Gas

501-7.10 ***The Investigator candidate shall describe Heating Ventilation and Air Conditioning (HVAC) system components and their relation to smoke and fire spread.***

- 1) Smoke dampers
- 2) Automatic shutoffs
- 3) Ductwork
- 4) Pipe and duct chases

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SECTION 8

ELECTRICITY AND FIRE

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.8 Inspect the performance of building systems, including detection, suppression, HVAC, utilities, and building compartmentation, given standard and special equipment and tools, so that a determination can be made as to the need for expert resources, an operating system's impact on fire growth and spread is considered in identifying origin areas, defeated and/or failed systems are identified, and the system's potential as a fire cause is recognized.

(A) Requisite Knowledge. Different types of detection, suppression, HVAC, utility, and building compartmentation such as fire walls and fire doors; types of expert resources for building systems; the impact of fire on various systems; common methods used to defeat a system's functional capability; and types of failures.

(B) Requisite Skills. Determine the system's operation and its effect on the fire; identify alterations to, and failure indicators of, building systems; and evaluate the impact of suppression efforts on building systems.

501-8.1 ***The Investigator candidate shall understand the importance of electricity to the fire investigation process.***

501-8.2 ***The Investigator candidate shall describe basic electrical theory.***

- 8.2.1 General
- 8.2.2 Comparing electricity to hydraulics
- 8.2.3 Ampacity
- 8.2.4 Conductivity of conductors
- 8.2.5 Ohm's Law
- 8.2.6 Electrical power
- 8.2.7 Ohm's Law's Wheel
- 8.2.8 Applying Ohm's Law

501-8.3 ***The Investigator candidate shall describe the typical building electrical systems and its components.***

- 8.3.1 General
- 8.3.2 Electrical service
 - 8.3.2.1 Single phase service
 - 8.3.2.2 Three phase service
- 8.3.3 Meter and base
- 8.3.4 Significance

501-8.4 ***The Investigator candidate shall identify the functions of service equipment.***

- 8.4.1 To provide means for turning off power to electrical system
- 8.4.2 To provide protection against electrical malfunctions
- 8.4.3 To divide the power distribution into several branch circuits

501-8.5 ***The Investigator candidate shall understand the principle of grounding.***

- 8.5.1 General
- 8.5.2 Floating neutral (open neutral)

501-8.6 ***The Investigator candidate shall understand the components of overcurrent protection.***

- 8.6.1 General
- 8.6.2 Fuses
 - 8.6.2.1 Operations
 - 8.6.2.2 Plug fuses
 - 8.6.2.3 Type S fuses
 - 8.6.2.4 Time-delay fuses
 - 8.6.2.5 Cartridge fuses
- 8.6.3 Circuit breakers
 - 8.6.3.1 Operations

- 8.6.3.2 Main breakers
- 8.6.3.3 Branch circuit breakers
- 8.6.3.4 Ground fault circuit interrupters (GFCI)
- 8.6.3.5 Arc fault circuit interrupters (AFCI)

8.6.4 Circuit breaker panels

501-8.7 ***The Investigator candidate shall describe a branch circuit and its components.***

- 8.7.1 Conductors
- 8.7.2 Size of conductors
- 8.7.3 Copper conductors
- 8.7.4 Aluminum conductors
- 8.7.5 Insulation

501-8.8 ***The Investigator candidate shall identify and describe the different types of outlets and devices found in a branch circuit.***

- 8.8.1 Switches
- 8.8.2 Receptacles
- 8.8.3 Other outlets, devices or equipment

501-8.9 ***The Investigator candidate shall describe how the use of improper electrical components can create sufficient heat for ignition.***

- 8.9.1 General
- 8.9.2 Resistance heating
- 8.9.3 Overcurrent and overload
- 8.9.4 Arcs
 - 8.9.4.1 General
 - 8.9.4.2 High voltage
 - 8.9.4.3 Static electricity
 - 8.9.4.4 Parting arcs
 - 8.9.4.5 Arcing across a carbonized path

- 8.9.5 Sparks
- 8.9.6 High resistance faults

501-8.10 ***The Investigator candidate shall identify and describe types of damage encountered in electrical systems.***

- 8.10.1 General
- 8.10.2 Short circuit and ground fault parting arcs
- 8.10.3 Arcing through a carbonized path due to thermal means (arcing through char)
- 8.10.4 Overheating connections
- 8.10.5 Overload
- 8.10.6 Effects not caused by electricity
 - 8.10.6.1 Conductor surface colors
 - 8.10.6.2 Melting by fire
 - 8.10.6.3 Alloying
 - 8.10.6.4 Mechanical gouges

501-8.11 ***The Investigator candidate shall identify arc melting of electrical conductors.***

- 8.11.1 Melting caused by electrical arcing
- 8.11.2 Melting caused by fire
- 8.11.3 Considerations and cautions
- 8.11.4 Undersized conductors
- 8.11.5 Nicked or stretched conductors
- 8.11.6 Collecting evidence
- 8.11.7 Deteriorated insulation
- 8.11.8 Over driven or misdriven staple
- 8.11.9 Short circuit

8.11.10 Beaded conductor

501-8.12 ***The Investigator candidate shall describe the role of static electricity in an ignition sequence.***

8.12.1 Introduction to static electricity

8.12.2 Generation of static electricity

8.12.2.1 General

8.12.2.2 Ignitable liquids

8.12.2.3 Charges on the surface of a liquid

8.12.2.4 Switch loading

8.12.2.5 Sprain operations

8.12.2.6 Gases

8.12.2.7 Dusts and fibers

8.12.2.8 Static electric discharge from the human body

8.12.2.9 Clothing

8.12.3 Incendive arc

8.12.4 Ignition energy

8.12.5 Controlling accumulations of static electricity

8.12.5.1 Humidification

8.12.5.2 Bonding and grounding

8.12.6 Conditions necessary for static arc ignition

8.12.7 Investigating static electric ignitions

8.12.8 Lightning

8.12.8.1 General

8.12.8.2 Lightning bolt characteristics

8.12.8.3 Lightning strikes

8.12.8.4 Lightning damage

8.12.8.5 Lightning detection networks

SECTION 9

BUILDING FUEL GAS SYSTEMS

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.8 Inspect the performance of building systems, including detection, suppression, HVAC, utilities, and building compartmentation, given standard and special equipment and tools, so that a determination can be made as to the need for expert resources, an operating system's impact on fire growth and spread is considered in identifying origin areas, defeated and/or failed systems are identified, and the system's potential as a fire cause is recognized.

(A) Requisite Knowledge. Different types of detection, suppression, HVAC, utility, and building compartmentation such as fire walls and fire doors; types of expert resources for building systems; the impact of fire on various systems; common methods used to defeat a system's functional capability; and types of failures.

(B) Requisite Skills. Determine the system's operation and its effect on the fire; identify alterations to, and failure indicators of, building systems; and evaluate the impact of suppression efforts on building systems.

501-9.1 *The Investigator candidate shall be familiar with building fuel gas systems.*

9.1.1 Impact of fuel gases on fire and explosions investigations.

9.1.2 Additional fire spread.

501-9.2 *The Investigator candidate shall identify the different fuel gases.*

9.2.1 Natural gas

9.2.2 Commercial propane

9.2.3 Other fuel gases
9.2.3.1 Commercial butane
9.2.3.2 Propane HD5
9.2.3.3 Manufactured gases

9.2.4 Odorization

501-9.3 ***The Investigator candidate shall identify different natural gas systems.***

- 9.3.1 Transmission pipelines
- 9.3.2 Distribution pipelines (mains)
- 9.3.3 Service lines
- 9.3.4 Metering

501-9.4 ***The Investigator candidate shall identify different LP-Gas Systems.***

- 9.4.1 LP-Gas storage containers
 - 9.4.1.1 Tanks
 - 9.4.1.2 Cylinders
- 9.4.2 Container appurtenances
 - 9.4.2.1 Pressure relief devices
 - 9.4.2.2 Connections for flow control
 - 9.4.2.3 Liquid level gauging devices
 - 9.4.2.4 Pressure gauges
- 9.4.3 Pressure regulation
- 9.4.4 Vaporizers

501-9.5 ***The Investigator candidate shall identify common fuel gas system components.***

- 9.5.1 Pressure regulations (reduction)
- 9.5.2 Service piping systems
- 9.5.3 Valves
- 9.5.4 Gas burners
 - 9.5.4.1 Manual ignition
 - 9.5.4.2 Pilot lights
 - 9.5.4.3 Pilotless igniters

501-9.6 ***The Investigator candidate shall identify the common piping in buildings.***

- 9.6.1 Size of piping
- 9.6.2 Piping materials
- 9.6.3 Joints and fittings
- 9.6.4 Piping installation
- 9.6.5 Main shut-off valves
- 9.6.6 Prohibited locations
- 9.6.7 Electrical bonding and grounding

501-9.7 ***The Investigator candidate shall identify common appliance and equipment requirements.***

- 9.7.1 Installation
- 9.7.2 Venting and air supply
- 9.7.3 Appliance controls

501-9.8 ***The Investigator candidate shall identify common fuel gas utilization equipment.***

- 9.8.1 Air heating
- 9.8.2 Water heating
- 9.8.3 Cooking
- 9.8.4 Refrigeration and cooling
- 9.8.5 Engines
- 9.8.6 Illumination
- 9.8.7 Incinerators, toilets, and exhaust afterburners

501-9.9 ***The Investigator candidate shall be familiar with investigating fuel gas systems.***

- 9.9.1 Systematic analysis

- 9.9.2 Compliance with codes and standards
- 9.9.3 Leakage
- 9.9.4 Pressure testing
- 9.9.5 Locating leaks
- 9.9.6 Testing flow rates and pressures
- 9.9.7 Underground migrations of fuel gases

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SECTION 10

FIRE-RELATED HUMAN BEHAVIOR

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.4: Establish evidence as to motive and/or opportunity, given an incendiary fire, so that the evidence is supported by documentation and meets the evidentiary requirements of the jurisdiction.

(A) Requisite Knowledge: Types of motives common to incendiary fires, methods used to discover opportunity, and human behavioral patterns relative to fire-setting.

(B) Requisite Skills: Financial analysis, records gathering and analysis, interviewing, and interpreting fire scene information and evidence for relationship to motive and/or opportunity.

501-10.1 **The Investigator candidate shall understand that the analysis of fire related human behavior will often be an integral part of the investigation.**

501-10.2 **The Investigator candidate shall understand the history of research as related to fire related human behavior.**

501-10.3 **The Investigator candidate shall identify and describe general considerations of human response to fires.**

10.3.1 Individual

10.3.1.1 Physical limitations

10.3.1.2 Cognitive comprehension limitations

10.3.1.3 Familiarity and physical setting

10.3.2 Groups

10.3.2.1 Group size

10.3.2.2 Group structure

10.3.2.3 Group permanence

10.3.2.4 Roles and norms

10.3.3 Characteristics of the physical setting

10.3.3.1 Location of exits

10.3.3.2 Number of exits

10.3.3.3 Height of the structure

10.3.3.4 Fire alarm systems

10.3.3.5 Fire suppression systems

- 10.3.4 Characteristics of the fire
 - 10.3.4.1 Presence of flame
 - 10.3.4.2 Presence of smoke
 - 10.3.4.3 Effects of toxic gases and oxygen depletion

501-10.4 ***The Investigator candidate shall identify and describe the factors related to fire initiation.***

- 10.4.1 Factors involved in accidental fires
 - 10.4.1.1 Improper maintenance operations
 - 10.4.1.2 Housekeeping
 - 10.4.1.3 Product labels, instructions and warnings
 - 10.4.1.4 Purpose of labels
 - 10.4.1.5 Purpose of instructions
 - 10.4.1.6 Purpose of warnings
 - 10.4.1.7 Key elements of a proper warning
 - 10.4.1.8 Standards on labels, instructions and warnings
- 10.4.2 Recalls
- 10.4.3 Other considerations
- 10.4.4 Violations of fire safety codes and standards

501-10.5 ***The Investigator candidate shall identify and describe the factors related to children and fire.***

- 10.5.1 Child fire setters
 - 10.5.1.1 Curiosity
 - 10.5.1.2 Age 2 - 6
- 10.5.2 Juvenile fire setters
 - 10.5.2.1 Broken family environment
 - 10.5.2.2 Physical trauma
 - 10.5.2.3 Emotional trauma
 - 10.5.2.4 Age 7 - 13
- 10.5.3 Adolescent fire setters
 - 10.5.3.1 Stress
 - 10.5.3.2 Anxiety
 - 10.5.3.3 Anger
 - 10.5.3.4 Symptom of another problem
 - 10.5.3.5 Age 14 - 16
- 10.5.4 Common to all ages

- 10.5.4.1 Frustration
- 10.5.4.2 Anger
- 10.5.4.3 Revenge
- 10.5.4.4 Attention

501-10.6 ***Incendiary fires, see SECTION 501- 22.4.***

501-10.7 ***The Investigator candidate shall identify and describe human factors related to fire spread.***

500-10.8 ***The Investigator candidate shall identify the basic concepts in recognition and response to fires.***

- 10.8.1 Perception of the danger (sensory clues)
- 10.8.2 Decision to act (response)
- 10.8.3 Action taken
- 10.8.4 Escape factors
- 10.8.5 Information received from survivors

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SECTION 11

LEGAL CONSIDERATIONS

4.1 General

NFPA 1033 4.1.5* The fire investigator shall adhere to all applicable legal and regulatory requirements.

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.3.3 Construct investigative notes, given a fire scene, available documents (e.g., prefire plans and inspection reports), and interview information, so that the notes are accurate, provide further documentation of the scene, and represent complete documentation of the scene findings.

(A) Requisite Knowledge. Relationship between notes, diagrams, and photos, how to reduce scene information into concise notes, and the use of notes during report writing and legal proceedings.

(B) Requisite Skills. Data-reduction skills, note-taking skills, and observational and correlating skills.

4.4 Evidence Collection/Preservation.

Duties shall include using proper physical and legal procedures to retain evidence required within the investigation.

NFPA 1033 4.4.2 Locate, collect, and package evidence, given standard or special tools and equipment and evidence collection materials, so that evidence is identified, preserved, collected, and packaged to avoid contamination and investigator-inflicted damage and the chain of custody is established.

(A) Requisite Knowledge. Types of evidence, authority requirements, impact of removing evidentiary items on civil or criminal proceedings (exclusionary or fire-cause supportive evidence), types, capabilities, and limitations of standard and special tools used to locate evidence, types of laboratory tests available, packaging techniques and materials, and impact of evidence collection on the investigation.

(B) Requisite Skills. Ability to recognize different types of evidence and determine whether evidence is critical to the investigation.

NFPA 1033 4.4.4 Maintain a chain of custody, given standard investigative tools, marking tools, and evidence tags or logs, so that written documentation exists for each piece of evidence and evidence is secured.

(A) Requisite Knowledge. Rules of custody and transfer procedures, types of evidence (e.g., physical evidence obtained at the scene, photos, and documents), and methods of recording the chain of custody.

(B) Requisite Skills. Ability to execute the chain of custody procedures and accurately complete necessary documents.

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.3 Coordinate expert resources, given the investigative file, reports, and documents, so that the expert's competencies are matched to the specific investigation needs, financial expenditures are justified, and utilization clearly furthers the investigative goals of determining cause or affixing responsibility.

(A) Requisite Knowledge. How to assess one's own expertise, qualification to be called for expert testimony, types of expert resources (e.g., forensic, CPA, polygraph, financial, human behavior disorders, and engineering), and methods to identify expert resources.

(B) Requisite Skills. Apply expert resources to further the investigation by networking with other investigators to identify experts, questioning experts relative to their qualifications, and developing a utilization plan for use of expert resources.

4.7 Presentations.

Duties shall include the presentation of findings to those individuals not involved in the actual investigations.

NFPA 1033 4.7.3 Testify during legal proceedings, given investigative findings, contents of reports, and consultation with legal counsel, so that all pertinent investigative information and evidence are presented clearly and accurately and the investigator's demeanor and attire are appropriate to the proceedings.

(A) Requisite Knowledge. Types of investigative findings, types of legal proceedings, professional demeanor requirements, and an understanding of due process and legal proceedings.

(B) Requisite Skills. Communication and listening skills and ability to differentiate facts from opinion and determine accepted procedures, practices, and etiquette during legal proceedings.

501-11.1 ***The Investigator candidate shall be familiar with legal consideration impacts for every phase of the fire investigation.***

501-11.2 ***The Investigator candidate shall ensure that constitutional considerations are observed.***

11.2.1 Amendment Four

11.2.2 Amendment Five

11.2.3 Amendment Six

11.2.4 Amendment Seven

11.2.5 Amendment Eight

501-11.3 ***The Investigator candidate shall observe all legal considerations during the investigation.***

11.3.1 Authority to conduct the investigation

11.3.2 Right of entry

11.3.3 Method of entry

11.3.3.1 Consent

11.3.3.2 Exigent circumstance

11.3.3.3 Administrative search warrant

11.3.3.4 Criminal search warrant

11.3.4 The questioning of suspects

11.3.5 Spoliation of evidence

11.3.5.1 Responsibility

11.3.5.2 Documentation

11.3.5.3 Remedies for spoliation

11.3.5.4 Notification to interested parties

11.3.5.5 Documentation prior to alteration

11.3.5.6 Alteration and movement of evidence

11.3.5.7 Notification prior to destructive testing by persons other than public authorities

501-11.4 ***The Investigator candidate shall understand pretrial legal considerations.***

11.4.1 Introduction

11.4.2 Forms of discovery

11.4.2.1 Request to produce

11.4.2.2 Interrogatories

11.4.2.3 Depositions

11.4.2.3.1 Procedure

11.4.2.3.2 Discovery depositions

11.4.2.3.3 Trial depositions

11.4.2.3.4 Reports

11.4.3 Motions

501-11.5 **The Investigator candidate shall be familiar with trial procedures in criminal and civil cases.**

- 11.5.1 Rules of evidence
- 11.5.2 Type of evidence
 - 11.5.2.1 Demonstrative evidence
 - 11.5.2.1.1 Photographs/ illustrative forms of evidence
 - 11.5.2.1.2 Samples
 - 11.5.2.2 Documentary evidence
 - 11.5.2.3 Testimonial evidence
 - 11.5.2.3.1 Fact witness
 - 11.5.2.3.2 Expert witness
 - 11.5.2.3.3 Admissibility of expert testimony
 - 11.5.2.3.4 Relevance
 - 11.5.2.3.5 Qualifications of expert
 - 11.5.2.3.6 Reliability of opinion
- 11.5.3 Forms of examination
 - 11.5.3.1 Direct examination
 - 11.5.3.2 Cross-examination
- 11.5.4 Forms of testimony
 - 11.5.4.1 Affidavits
 - 11.5.4.2 Answers to interrogatories
 - 11.5.4.3 Depositions and trial testimony
- 11.5.5 Burden of proof
- 11.5.6 Criminal prosecution
 - 11.5.6.1 Arson
 - 11.5.6.2 Arson statutes
 - 11.5.6.3 Factors to be considered
 - 11.5.6.4 Other fire related criminal acts
 - 11.5.6.5 Arson-reported statutes
- 11.5.7 Civil litigation
 - 11.5.7.1 Negligence
 - 11.5.7.2 Codes, regulations, and standards
 - 11.5.7.3 Product liability
 - 11.5.7.4 Strict liability

SECTION 12

SAFETY

4.1 General

NFPA 1033 4.1.3* Because fire investigators are required to perform activities in adverse conditions, site safety assessments shall be completed on all scenes and regional and national safety standards shall be followed and included in organizational policies and procedures.

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.2* Conduct an exterior survey, given standard equipment and tools, so that evidence is preserved, fire damage is interpreted, hazards are identified to avoid injuries, accessibility to the property is determined, and all potential means of ingress and egress are discovered.

(A) Requisite Knowledge. The types of building construction and the effects of fire on construction materials, types of evidence commonly found in the perimeter, evidence preservation methods, the effects of fire suppression, fire behavior and spread, fire patterns, and a basic awareness of the dangers of hazardous materials.

(B) Requisite Skills. Assess fire ground and structural condition, observe the damage from and effects of the fire, and interpret fire patterns.

501-12.1 **The Investigator candidate shall describe the safety issues as they relate to the fire investigation.**

- 12.1.1 Investigating the scene alone
- 12.1.2 Hazard and risk assessment
 - 12.1.2.1 Identify the hazards
 - 12.1.2.1.1 Physical hazard
 - 12.1.2.1.2 Structural hazard
 - 12.1.2.1.3 Electrical hazard
 - 12.1.2.1.4 Chemical hazard
 - 12.1.2.1.5 Biological hazard
 - 12.1.2.1.6 Mechanical hazard
 - 12.1.2.2 Determining the risk of the hazard
 - 12.1.2.3 Control the hazard
 - 12.1.2.3.1 Engineering controls
 - 12.1.2.3.2 Administrative controls
 - 12.1.2.3.3 Proper selection and use of Personal Protective Equipment (PPE)

- 12.1.3 Safety clothing and equipment
- 12.1.4 Fire scene hazards
- 12.1.5 Personal health and safety
- 12.1.6 Investigator fatigue

501-12.2 ***The Investigator candidate shall describe factors that have an influence on scene safety.***

- 12.2.1 Status of suppression
- 12.2.2 Structural stability
- 12.2.3 Utilities
- 12.2.4 Electrical hazards
- 12.2.5 Standing water
- 12.2.6 Safety of bystanders
- 12.2.7 Safety of the fire scene atmosphere

501-12.3 ***The Investigator candidate shall describe safety issues associated with criminal acts or acts of terrorism.***

- 12.3.1 Secondary devices
- 12.3.2 Residue chemicals
- 12.3.3 Biological and radiological terrorism
- 12.3.4 Exposure to tools and equipment

501-12.4 ***Describe safety consideration in off-scene investigation activities.***

****Note****

The following part of Section 12 is not contained in NFPA 921, *Guide for Fire and Explosion Investigation*. The reference for this material is found in IFSTA, *Fire Inspection and Code Enforcement*. See also the Emergency Response Guidebook (ERG).

501-12.5 **The Investigator candidate shall demonstrate knowledge of safety principles applicable to hazardous materials response.**

501-12.6 **The Investigator candidate shall identify the difference between hazardous materials incidents and other emergencies.**

501-12.7 **The Investigator candidate, utilizing the Emergency Response Guidebook, shall:**

- 1) Identify the three methods for determining the appropriate guide page for a specific hazardous material.
 - a) Locate UN number in the yellow-bordered pages.
 - b) Locate name of material in the alphabetic listing in the blue-bordered pages.
 - c) Locate a matching placard in the table of placards and consult the two-digit guide number located next to the similar placard.
- 2) Identify two general types of hazards found on each guide page.
 - a) Fire/Explosive
 - b) Health

501-12.8 **The Investigator candidate, given an example of an NFPA 704 marking, shall identify the significance of the following components.**

- 1) Three categories of hazard
 - a) Health - Blue color
 - b) Flammability - Red color
 - c) Reactivity - Yellow color
- 2) Special hazards that may be indicated
 - a) W
 - b) OX
- 3) Five degrees of hazard - (4-0)

501-12.9 ***The Investigator candidate shall identify the following information from material safety data sheets (MSDS).***

- 1) The Investigator candidate shall list four organizations from which to obtain a “Material Safety Data Sheet” (MSDS)
 - a) Manufacturer of the material
 - b) Supplier
 - c) Facility hazard and communication plan
 - d) Local emergency planning committee (LEPC)

- 2) The Investigator candidate shall be familiar with the different MSDS chapters

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SECTION 13

SOURCES OF INFORMATION

4.1 General

NFPA 1033 4.1.4 The fire investigator shall maintain necessary liaison with other interested professionals and entities.

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.8 Inspect the performance of building systems, including detection, suppression, HVAC, utilities, and building compartmentation, given standard and special equipment and tools, so that a determination can be made as to the need for expert resources, an operating system's impact on fire growth and spread is considered in identifying origin areas, defeated and/or failed systems are identified, and the system's potential as a fire cause is recognized.

(A) Requisite Knowledge. Different types of detection, suppression, HVAC, utility, and building compartmentation such as fire walls and fire doors; types of expert resources for building systems; the impact of fire on various systems; common methods used to defeat a system's functional capability; and types of failures.

(B) Requisite Skills. Determine the system's operation and its effect on the fire; identify alterations to, and failure indicators of, building systems; and evaluate the impact of suppression efforts on building systems.

4.5 Interview.

Duties shall include obtaining information regarding the overall fire investigation from others through verbal communication.

NFPA 1033 4.5.1 Develop an interview plan, given no special tools or equipment, so that the plan reflects a strategy to further determine the fire cause and affix responsibility and includes a relevant questioning strategy for each individual to be interviewed that promotes the efficient use of the investigator's time.

(A) Requisite Knowledge. Persons who can provide information that furthers the fire cause determination or the affixing of responsibility, types of questions that are pertinent and efficient to ask of different information sources (first responders, neighbors, witnesses, suspects, and so forth), and pros and cons of interviews versus document gathering.

(B) Requisite Skills. Planning skills, development of focused questions for specific individuals, and evaluation of existing file data to help develop questions and fill investigative gaps.

NFPA 1033 4.5.2 Conduct interviews, given incident information, so that pertinent information is obtained, follow-up questions are asked, responses to all questions are elicited, and the response to each question is documented accurately.

(A) Requisite Knowledge. Types of interviews, personal information needed for proper documentation or follow-up, documenting methods and tools, and types of nonverbal communications and their meaning.

(B) Requisite Skills. Adjust interviewing strategies based on deductive reasoning, interpret verbal and nonverbal communications, apply legal requirements applicable, and exhibit strong listening skills.

NFPA 1033 4.5.3 Evaluate interview information, given interview transcripts or notes and incident data, so that all interview data is individually analyzed and correlated with all other interviews, corroborative and conflictive information is documented, and new leads are developed.

(A) Requisite Knowledge. Types of interviews, report evaluation methods, and data correlation methods.

(B) Requisite Skills. Data correlation skills and the ability to evaluate source information (e.g., first responders and other witnesses).

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.3 Coordinate expert resources, given the investigative file, reports, and documents, so that the expert's competencies are matched to the specific investigation needs, financial expenditures are justified, and utilization clearly furthers the investigative goals of determining cause or affixing responsibility.

(A) Requisite Knowledge. How to assess one's own expertise, qualification to be called for expert testimony, types of expert resources (e.g., forensic, CPA, polygraph, financial, human behavior disorders, and engineering), and methods to identify expert resources.

(B) Requisite Skills. Apply expert resources to further the investigation by networking with other investigators to identify experts, questioning experts relative to their qualifications, and developing a utilization plan for use of expert resources.

501-13.1 The Investigator candidate shall identify sources of information and assistance available to the Investigator during a fire investigation.

13.1.1 Purpose of obtaining information.

13.1.2 Reliability of information obtained.

501-13.2 The Investigator candidate shall describe the legal considerations on sources of information.

13.2.1 Freedom of Information Act

13.2.2 Privileged communications

13.2.3 Confidential communications

501-13.3 ***The Investigator candidate shall describe the different forms of information.***

13.3.1 Verbal information

13.3.2 Written information

13.3.3 Visual information

13.3.4 Electronic information

501-13.4 ***The Investigator candidate shall be able to gather both useful and accurate information through the process of interviewing.***

13.4.1 Purpose of interviews

13.4.2 Preparation for the interview

13.4.3 Document the interview

13.4.4 Interview approaches

13.4.4.1 Those without an interest in the outcome

13.4.4.2 Those with an interest in the outcome

13.4.4.3 Suspects

13.4.5 Basic information

13.4.6 Active skills important to an interviewer

13.4.7 The two most common interviewing mistakes

13.4.8 “Non-verbal” indicators

13.4.9 Evaluating the interview

13.4.10 Identifying data correlation methods

501-13.5 ***The Investigator candidate shall identify government sources of information useful during a fire investigation.***

13.5.1 Municipal

13.5.2 County

13.5.3 State

13.5.4 Federal

501-13.6 ***The Investigator candidate shall identify private sources of information useful during a fire investigation.***

13.6.1 National Fire Protection Association

13.6.2 Society of Fire Protection Engineers

13.6.3 American Society for Testing and Materials

13.6.4 American National Standards Institute

13.6.5 National Association of Fire Investigators

13.6.6 International Association of Arson Investigators

13.6.7 Regional fire investigation organizations

13.6.8 Real estate industry

13.6.9 Abstract and title companies

13.6.10 Financial institutions

13.6.11 Insurance industry

13.6.12 Educational institutions

13.6.13 Utility companies

13.6.14 Trade organizations

13.6.15 Local television stations

13.6.16 Lightning detection networks

13.6.17 Other private sources

SECTION 14

PLANNING THE INVESTIGATION

4.1 General

NFPA 1033 4.1.6 The fire investigator shall understand the organization and operation of the investigative team within an incident management system.

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.1 Secure the fire ground, given marking devices, sufficient personnel, and special tools and equipment, so that unauthorized persons can recognize the perimeters of the investigative scene and are kept from restricted areas and all evidence or potential evidence is protected from damage or destruction.

(A) Requisite Knowledge. Fire ground hazards, types of evidence, and the importance of fire scene security, evidence preservation, and issues relating to spoliation.

(B) Requisite Skills. Use of marking devices.

NFPA 1033 4.2.6 Examine and remove fire debris, given standard equipment and tools, so that all debris is checked for fire cause evidence, potential ignition source(s) is identified, and evidence is preserved without investigator-inflicted damage or contamination.

(A) Requisite Knowledge. Basic understanding of ignition processes, characteristics of ignition sources, and ease of ignition of fuels; debris-layering techniques; use of tools and equipment during the debris search; types of fire cause evidence commonly found in various degrees of damage; and evidence-gathering methods and documentation.

(B) Requisite Skills. Employ search techniques that further the discovery of fire cause evidence and ignition sources, use search techniques that incorporate documentation, and collect and preserve evidence.

501-14.1 **The Investigator candidate shall identify the resources at their disposal and those available from outside sources before those resources are needed.**

501-14.2 **The Investigator candidate shall identify basic information necessary to plan and conduct an investigation.**

- 14.2.1 Location
- 14.2.2 Date and time of incident
- 14.2.3 Weather conditions

- 14.2.4 Size and complexity of the incident
- 14.2.5 Type and use of structure
- 14.2.6 Nature and extent of damage
- 14.2.7 Security of the scene
- 14.2.8 Purpose of the investigation

501-14.3 ***The Investigator candidate shall be able to organize the basic investigation functions that are commonly performed in each investigation.***

501-14.4 ***The Investigator candidate shall identify the goals of a pre-investigation team meeting.***

- 14.4.1 Equipment and facilities
- 14.4.2 Personal safety equipment
 - 14.4.2.1 Eye protection
 - 14.4.2.2 Flashlight
 - 14.4.2.3 Gloves
 - 14.4.2.4 Helmet or hard hat
 - 14.4.2.5 Respiratory protection (type depending on exposure)
 - 14.4.2.6 Safety boots or shoes
 - 14.4.2.7 Turnout gear or coveralls
- 14.4.3 Tools and equipment
 - 14.4.3.1 Absorption material
 - 14.4.3.2 Axe
 - 14.4.3.3 Broom
 - 14.4.3.4 Camera and film
 - 14.4.3.5 Claw hammer
 - 14.4.3.6 Directional compass
 - 14.4.3.7 Evidence-collecting container
 - 14.4.3.8 Evidence labels (sticky)
 - 14.4.3.9 Hand towels
 - 14.4.3.10 Hatchet
 - 14.4.3.11 Hydrocarbon detector
 - 14.4.3.12 Ladder
 - 14.4.3.13 Lighting
 - 14.4.3.14 Magnet
 - 14.4.3.15 Marking pens

- 14.4.3.16 Paint brushes
- 14.4.3.17 Paper towels/wiping cloths
- 14.4.3.18 Pen knife
- 14.4.3.19 Pliers/wire cutters
- 14.4.3.20 Pry bar
- 14.4.3.21 Rake
- 14.4.3.22 Rope
- 14.4.3.23 Rulers
- 14.4.3.24 Saw
- 14.4.3.25 Screwdrivers (multiple types)
- 14.4.3.26 Shovel
- 14.4.3.27 Sieve
- 14.4.3.28 Soap and hand cleaner
- 14.4.3.29 Styrofoam cups
- 14.4.3.30 Tape measure
- 14.4.3.31 Tape recorder
- 14.4.3.32 Tongs
- 14.4.3.33 Tweezers
- 14.4.3.34 Twine
- 14.4.3.35 Voltmeter/ohmmeter
- 14.4.3.36 Water
- 14.4.3.37 Writing/drawing equipment
- 14.4.3.38 Scene tape
- 14.4.3.40 Evidence marking devices

501-14.5 ***The Investigator candidate shall identify the specialized personnel and technical consultants that may be needed to provide technical assistance.***

- 14.5.1 General
- 14.5.2 Materials engineer or scientist
- 14.5.3 Mechanical engineer
- 14.5.4 Electrical engineer
- 14.5.5 Chemical engineer/chemist
- 14.5.6 Fire science and engineering
 - 14.5.6.1 Fire protection engineer
 - 14.5.6.2 Fire engineering technologist
 - 14.5.6.3 Fire engineering technician
- 14.5.7 Industry expert

- 14.5.8 Attorneys
- 14.5.9 Insurance agent/adjuster
- 14.5.10 Canine teams

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SECTION 15

DOCUMENTATION OF THE INVESTIGATION

4.3 Documenting the Scene.

Duties shall include diagramming the scene, photographing, and taking field notes to be used to compile a final report.

NFPA 1033 4.3.1 Diagram the scene, given standard tools and equipment, so that the scene is accurately represented and evidence, pertinent contents, significant patterns, and area(s) or point(s) of origin are identified.

(A) Requisite Knowledge. Commonly used symbols and legends that clarify the diagram, types of evidence and patterns that need to be documented, and formats for diagramming the scene.

(B) Requisite Skills. Ability to sketch the scene, basic drafting skills, and evidence recognition and observational skills.

NFPA 1033 4.3.2 Photographically document the scene, given standard tools and equipment, so that the scene is accurately depicted and the photographs support scene findings.

(A) Requisite Knowledge. Working knowledge of high-resolution camera and flash, the types of film, media, and flash available, and the strengths and limitations of each.

(B) Requisite Skills. Ability to use a high-resolution camera, flash, and accessories.

NFPA 1033 4.3.3 Construct investigative notes, given a fire scene, available documents (e.g., prefire plans and inspection reports), and interview information, so that the notes are accurate, provide further documentation of the scene, and represent complete documentation of the scene findings.

(A) Requisite Knowledge. Relationship between notes, diagrams, and photos, how to reduce scene information into concise notes, and the use of notes during report writing and legal proceedings.

(B) Requisite Skills. Data-reduction skills, note-taking skills, and observational and correlating skills.

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.2 Evaluate the investigative file, given all available file information, so that areas for further investigation are identified, the relationship between gathered documents and information is interpreted, and corroborative evidence and information discrepancies are discovered.

(A) Requisite Knowledge. File assessment and/or evaluation methods, including accurate documentation practices, and requisite investigative elements.

(B) Requisite Skills. Information assessment, correlation, and organizational skills.

501-15.1 ***The Investigator candidate shall describe the purpose of recording the fire scene.***

501-15.2 ***The Investigator candidate shall describe the purpose of fire scene photography and the importance of timing.***

15.2.1 General

15.2.2 Timing

15.2.3 Basics

15.2.3.1 General

15.2.3.2 Types of cameras

15.2.3.3 Film

15.2.3.4 Digital photography

15.2.3.5 Lenses

15.2.3.6 Filters

15.2.3.7 Lighting

15.2.3.8 Special types of photography

15.2.4 Composition and technique

15.2.4.1 General

15.2.4.2 Sequential photos

15.2.4.3 Mosaics

15.2.4.4 Photo diagram

15.2.4.5 Assisting photographer

15.2.4.6 Photography and the courts

15.2.5 Video

15.2.6 Suggested activities to be documented

15.2.6.1 During the fire

15.2.6.2 Crowd or people photographs

15.2.6.3 Fire suppression photographs

15.2.6.4 Exterior photographs

15.2.6.5 Structural photographs

15.2.6.6 Interior photographs

15.2.6.7 Utility and appliance photographs

15.2.6.8 Evidence photographs

15.2.6.9 Victim photographs

15.2.6.10 Witness viewpoint photographs

15.2.6.11 Aerial photographs

15.2.7 Photography tips

15.2.8 Presentation of photographs

501-15.3 ***The Investigator candidate shall describe the importance of note taking.***

15.3.1 Forms of incident field notes

15.3.2 Forms for collecting data

15.3.3 Dictation of field notes

501-15.4 ***The Investigator candidate shall understand the importance of diagrams and drawings.***

15.4.1 Types of drawings

15.4.1.1 Sketches

15.4.1.2 Diagrams

15.4.2 Selection of drawings

15.4.3 Drawing tools and equipment

15.4.4 Diagram elements

15.4.4.1 General information

15.4.4.2 Identification of compass orientation

15.4.4.3 Scale

15.4.4.4 Symbols

15.4.4.5 Legends

15.4.5 Drawings

15.4.5.1 Site or area plan

15.4.5.2 Floor plans

15.4.5.3 Elevations

15.4.5.4 Details and selections

15.4.5.5 Exploded view diagrams

15.4.5.6 Three-dimensional representations

15.4.5.7 Specialized fire investigation diagrams

15.4.6 Prepared design and construction drawings

15.4.6.1 General

15.4.6.2 Architectural and engineering drawings

15.4.6.3 Architectural and engineering schedules

15.4.6.4 Specifications

15.4.6.5 Appliance and building equipment

501-15.5 ***The Investigator candidate must understand the purpose of the report to effectively communicate the observations analyses and conclusions made during an investigation.***

- 15.5.1 Descriptive information
- 15.5.2 Pertinent facts
- 15.5.3 Opinions and conclusions

****Note: The following part of Section 15 does not come from NFPA 921****

501-15.6 ***The Investigator candidate shall identify and describe the process of preparing and completing a final, accurate and concise report.***

- 1) National Fire Incident Reporting System (NFIRS) forms
- 2) Fire reports required by the AHJ

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SECTION 16

PHYSICAL EVIDENCE

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.1 Secure the fire ground, given marking devices, sufficient personnel, and special tools and equipment, so that unauthorized persons can recognize the perimeters of the investigative scene and are kept from restricted areas and all evidence or potential evidence is protected from damage or destruction.

(A) Requisite Knowledge. Fire ground hazards, types of evidence, and the importance of fire scene security, evidence preservation, and issues relating to spoliation.

(B) Requisite Skills. Use of marking devices.

NFPA 1033 4.2.6 Examine and remove fire debris, given standard equipment and tools, so that all debris is checked for fire cause evidence, potential ignition source(s) is identified, and evidence is preserved without investigator-inflicted damage or contamination.

(A) Requisite Knowledge. Basic understanding of ignition processes, characteristics of ignition sources, and ease of ignition of fuels; debris-layering techniques; use of tools and equipment during the debris search; types of fire cause evidence commonly found in various degrees of damage; and evidence-gathering methods and documentation.

(B) Requisite Skills. Employ search techniques that further the discovery of fire cause evidence and ignition sources, use search techniques that incorporate documentation, and collect and preserve evidence.

4.3 Documenting the Scene.

Duties shall include diagramming the scene, photographing, and taking field notes to be used to compile a final report.

NFPA 1033 4.3.1 Diagram the scene, given standard tools and equipment, so that the scene is accurately represented and evidence, pertinent contents, significant patterns, and area(s) or point(s) of origin are identified.

(A) Requisite Knowledge. Commonly used symbols and legends that clarify the diagram, types of evidence and patterns that need to be documented, and formats for diagramming the scene.

(B) Requisite Skills. Ability to sketch the scene, basic drafting skills, and evidence recognition and observational skills.

4.4 Evidence Collection/Preservation.

Duties shall include using proper physical and legal procedures to retain evidence required within the investigation.

NFPA 1033 4.4.1 Utilize proper procedures for managing victims and fatalities, given a protocol and appropriate personnel, so that all evidence is discovered and preserved and the protocol procedures are followed.

(A) Requisite Knowledge. Types of evidence associated with fire victims and fatalities and evidence preservation methods.

(B) Requisite Skills. Observational skills and the ability to apply protocols to given situations.

NFPA 1033 4.4.2* Locate, collect, and package evidence, given standard or special tools and equipment and evidence collection materials, so that evidence is identified, preserved, collected, and packaged to avoid contamination and investigator-inflicted damage and the chain of custody is established.

(A) Requisite Knowledge. Types of evidence, authority requirements, impact of removing evidentiary items on civil or criminal proceedings (exclusionary or fire-cause supportive evidence), types, capabilities, and limitations of standard and special tools used to locate evidence, types of laboratory tests available, packaging techniques and materials, and impact of evidence collection on the investigation.

(B) Requisite Skills. Ability to recognize different types of evidence and determine whether evidence is critical to the investigation.

NFPA 1033 4.4.3 Select evidence for analysis given all information from the investigation, so that items for analysis support specific investigation needs.

(A) Requisite Knowledge. Purposes for submitting items for analysis, types of analytical services available, and capabilities and limitations of the services performing the analysis.

(B) Requisite Skills. Evaluate the fire incident to determine forensic, engineering, or laboratory needs.

NFPA 1033 4.4.4 Maintain a chain of custody, given standard investigative tools, marking tools, and evidence tags or logs, so that written documentation exists for each piece of evidence and evidence is secured.

(A) Requisite Knowledge. Rules of custody and transfer procedures, types of evidence (e.g., physical evidence obtained at the scene, photos, and documents), and methods of recording the chain of custody.

(B) Requisite Skills. Ability to execute the chain of custody procedures and accurately complete necessary documents.

NFPA 1033 4.4.5 Dispose of evidence, given jurisdictional or agency regulations and file information, so that the disposal is timely, safely conducted, and in compliance with jurisdictional or agency requirements.

(A) Requisite Knowledge. Disposal services available and common disposal procedures and problems.

(B) Requisite Skills. Documentation skills.

501-16.1 ***The Investigator candidate shall be familiar with the recommended and accepted methods of processing physical evidence.***

501-16.2 ***The Investigator candidate shall define physical evidence.***

501-16.3 ***The Investigator candidate shall describe the importance of preservation of the fire scene and physical evidence.***

- 16.3.1 General
- 16.3.2 Fire patterns as physical evidence
- 16.3.3 Artifact evidence
- 16.3.4 Protecting evidence
- 16.3.5 Role and responsibility of fire protection personnel in protecting the fire scene
 - 16.3.5.1 General
 - 16.3.5.2 Preservation
 - 16.3.5.3 Caution in fire suppression operations
 - 16.3.5.3.1 Use of water lines and hose streams
 - 16.3.5.3.2 Overhaul
 - 16.3.5.3.3 Salvage
 - 16.3.5.3.4 Movement of knobs and switches
 - 16.3.5.3.5 Use of power tools
 - 16.3.5.3.6 Limiting access of firefighters and other emergency personnel
- 16.3.6 Roles and responsibility of the fire investigator
- 16.3.7 Practical considerations

501-16.4 ***The Investigator candidate shall describe contamination of physical evidence.***

- 16.4.1 Contamination of evidence containers
- 16.4.2 Contamination during collection
- 16.4.3 Contamination by firefighters

501-16.5 ***The Investigator candidate shall describe methods of collection.***

- 16.5.1 General
- 16.5.2 Documenting the collection of physical evidence

- 16.5.3 Collection of traditional forensic physical evidence
- 16.5.4 Collection of evidence for accelerant testing
 - 16.5.4.1 Liquid accelerant characteristics
 - 16.5.4.2 Canine/handler teams
 - 16.5.4.3 Collection of liquid samples for ignitable liquid testing
 - 16.5.4.4 Collection of liquid evidence absorbed by solid materials
 - 16.5.4.5 Collection of solid samples for accelerant testing
 - 16.5.4.6 Comparison samples
 - 16.5.4.7 Canine teams
- 16.5.5 Collection of gaseous samples
- 16.5.6 Collection of electrical equipment and system components
- 16.5.7 Collection of appliances and small electrical equipment

501-16.6 ***The Investigator candidate shall identify and describe different types of evidence containers.***

- 16.6.1 General
- 16.6.2 Liquid and solid accelerant evidence containers
 - 16.6.2.1 Metal cans
 - 16.6.2.2 Glass jars
 - 16.6.2.3 Special evidence bags
 - 16.6.2.4 Common plastic bags

501-16.7 ***The Investigator candidate shall describe the methods of identifying physical evidence.***

501-16.8 ***The Investigator candidate shall describe the proper methods of transportation and storage of physical evidence.***

- 16.8.1 Hand delivery
- 16.8.2 Shipment
- 16.8.3 Storage of evidence

501-16.9 ***The Investigator candidate shall identify and describe the evidence chain of custody of physical evidence.***

501-16.10 ***The Investigator candidate shall identify types of analytical methods and tests applicable to certain fire investigations, and the capabilities and limitations of the services that perform the analysis.***

16.10.1 Laboratory examination and testing

16.10.2 Test methods

16.10.3 Sufficiency of samples

16.10.4 Comparative examination and testing

501-16.11 ***The Investigator candidate shall describe the proper procedure for evidence disposition.***

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SECTION 17

ORIGIN DETERMINATION

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.2* Conduct an exterior survey, given standard equipment and tools, so that evidence is preserved, fire damage is interpreted, hazards are identified to avoid injuries, accessibility to the property is determined, and all potential means of ingress and egress are discovered.

(A) Requisite Knowledge. The types of building construction and the effects of fire on construction materials, types of evidence commonly found in the perimeter, evidence preservation methods, the effects of fire suppression, fire behavior and spread, fire patterns, and a basic awareness of the dangers of hazardous materials.

(B) Requisite Skills. Assess fire ground and structural condition, observe the damage from and effects of the fire, and interpret fire patterns.

NFPA 1033 4.2.3 Conduct an interior survey, given standard equipment and tools, so that areas of potential evidentiary value requiring further examination are identified and preserved, the evidentiary value of contents is determined, and hazards are identified in order to avoid injuries.

(A) Requisite Knowledge. The types of building construction and interior finish and the effects of fire on those materials, the effects of fire suppression, fire behavior and spread, evidence preservation methods, fire patterns, effects of building contents on fire growth, the relationship of building contents to the overall investigation, weather conditions at the time of the fire, and fuel moisture.

(B) Requisite Skills. Assess structural conditions, observe the damage and effects of the fire, discover the impact of fire suppression efforts on fire flow and heat propagation, and evaluate protected areas to determine the presence and/or absence of contents.

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.5* Formulate an opinion concerning origin, cause, or responsibility for the fire, given all investigative findings, so that the opinion regarding origin, cause, or responsibility for a fire is supported by the data, facts, records, reports, documents, and evidence.

(A) Requisite Knowledge. Analytical methods and procedures (e.g., hypothesis development and testing, systems analysis, time lines, link analysis, fault tree analysis, and data reduction matrixing).

(B) Requisite Skills. Analytical and assimilation skills.

501-17.1 The Investigator candidate shall identify the following sources used in origin determination.

- 17.1.1 Witness information
- 17.1.2 Fire patterns
- 17.1.3 Arc mapping
- 17.1.4 Fire dynamics

501-17.2 ***The Investigator candidate shall identify and describe the overall methodology of conducting a scene assessment.***

- 17.2.1 Scientific method
- 17.2.2 Sequence of activities
- 17.2.3 Sequential pattern analysis
- 17.2.4 Systematic procedure
- 17.2.5 Recommended methodology

501-17.3 ***The Investigator candidate shall identify the data collection process for origin determination.***

- 17.3.1 Initial scene assessment
 - 17.3.1.1 Safety assessment
 - 17.3.1.2 Scope of the examination
 - 17.3.1.3 Order of the examination
 - 17.3.1.4 Surrounding areas
 - 17.3.1.5 Structure exterior
 - 17.3.1.6 Structure interior
 - 17.3.1.7 Post-fire alterations
- 17.3.2 Excavation and reconstruction
- 17.3.3 Additional data collection activities for origin determination
 - 17.3.3.1 Pre-fire conditions
 - 17.3.3.2 Description of fuels
 - 17.3.3.3 Structure dimensions
 - 17.3.3.4 Building systems and ventilation
 - 17.3.3.5 Weather conditions
 - 17.3.3.6 Electrical systems
 - 17.3.3.7 Electrical loads
 - 17.3.3.8 HVAC systems

- 17.3.3.9 Fuel gas systems
- 17.3.3.10 Liquid fuel systems
- 17.3.3.11 Fire protection systems
- 17.3.3.12 Fire protection systems data
- 17.3.3.13 Security cameras
- 17.3.3.14 Intrusion alarm systems
- 17.3.3.15 Witness observations

501-17.4 ***The Investigator candidate shall recognize the importance of analyzing the following data.***

- 17.4.1 Fire patterns analysis
 - 17.4.1.1 Consideration of all patterns
 - 17.4.1.2 Sequence of patterns
 - 17.4.1.3 Pattern generation
 - 17.4.1.4 Ventilation
 - 17.4.1.5 Movement and intensity patterns
- 17.4.2 Heat and flame vector analysis
 - 17.4.2.1 Complementary vectors
 - 17.4.2.2 Heat source
 - 17.4.2.3 Additional tools for pattern visualization
- 17.4.3 Depth of char analysis
 - 17.4.3.1 Depth of char diagram
 - 17.4.3.2 Measuring depth of char
 - 17.4.3.3 Location of measurements
 - 17.4.3.4 Missing wood
 - 17.4.3.5 Depth of char surveys with fuel gases
- 17.4.4 Depth of calcination survey
 - 17.4.4.1 Depth of calcination diagram
 - 17.4.4.2 Measuring depth of calcination
- 17.4.5 Arc surveys or arc mapping
 - 17.4.5.1 Suggested procedure
 - 17.4.5.2 Arc survey diagrams
 - 17.4.5.3 Locating arc sites
 - 17.4.5.4 Documenting arc sites
 - 17.4.5.5 Arc survey evidence collection
 - 17.4.5.6 Arc survey utilization
- 17.4.6 Analysis of sequential events
- 17.4.7 Fire dynamics

501-17.5 ***The Investigator candidate shall identify the process of developing an origin hypothesis.***

- 17.5.1 Initial hypothesis
- 17.5.2 Modifying the initial hypothesis

500-17.6 ***The Investigator candidate shall identify the proper scientific method of testing of origin hypotheses.***

- 17.6.1 Means of hypothesis testing
- 17.6.2 Analytical techniques and tools
 - 17.6.2.1 Time line analysis
 - 17.6.2.2 Fire modeling
 - 17.6.2.3 Experimental testing

500-17.7 ***The Investigator candidate shall select a final hypothesis.***

- 17.7.1 Defining the area of origin
- 17.7.2 Inconsistent data
- 17.7.3 Case file review

501-17.8 ***The Investigator candidate shall identify when there is insufficient data to define the origin.***

- 17.8.1 Large area adequate for determination
- 17.8.2 Justification of a large area of origin
- 17.8.3 Eyewitness evidence of origin area

SECTION 18

FIRE CAUSE DETERMINATION

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.5* Formulate an opinion concerning origin, cause, or responsibility for the fire, given all investigative findings, so that the opinion regarding origin, cause, or responsibility for a fire is supported by the data, facts, records, reports, documents, and evidence.

(A) Requisite Knowledge. Analytical methods and procedures (e.g., hypothesis development and testing, systems analysis, time lines, link analysis, fault tree analysis, and data reduction matrixing).

(B) Requisite Skills. Analytical and assimilation skills.

501-18.1 **The Investigator candidate shall define “fire cause.”**

501-18.2 **The Investigator candidate shall identify and describe the process of elimination and its limitations.**

501-18.3 **The Investigator candidate shall describe the source and form of heat of ignition.**

18.3.1 Source of ignition energy

18.3.2 Define a competent ignition source

18.3.3 Describe the three phases of ignition.

18.3.3.1 Generation

18.3.3.2 Transmission

18.3.3.3 Heating

18.3.4 Describe common types of heat-producing devices, substances, or circumstances that could cause ignition.

501-18.4 **The Investigator candidate shall identify and describe the first material ignited.**

18.4.1 Surface-to-mass ratio

18.4.2 Initial fuel ignited

18.4.3 Gases and vapors reaction

501-18.5 ***The Investigator candidate shall determine the ignition sequence.***

501-18.6 ***The Investigator candidate shall formulate an opinion of fire cause that will withstand the challenge of reasonable examination.***

18.6.1 Probable

18.6.2 Possible

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SECTION 19

ANALYSING THE INCIDENT FOR CAUSE AND RESPONSIBILITY

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.1 Gather reports and records, given no special tools, equipment, or materials, so that all gathered documents are applicable to the investigation, complete, and authentic; the chain of custody is maintained; and the material is admissible in a legal proceeding.

(A) Requisite Knowledge. Types of reports needed that facilitate determining responsibility for the fire (e.g., police reports, fire reports, insurance policies, financial records, deeds, private investigator reports, outside photos, and videos) and location of these reports.

(B) Requisite Skills. Identify the reports and documents necessary for the investigation, implement the chain of custody, and organizational skills.

NFPA 1033 4.6.2 Evaluate the investigative file, given all available file information, so that areas for further investigation are identified, the relationship between gathered documents and information is interpreted, and corroborative evidence and information discrepancies are discovered.

(A) Requisite Knowledge. File assessment and/or evaluation methods, including accurate documentation practices, and requisite investigative elements.

(B) Requisite Skills. Information assessment, correlation, and organizational skills.

NFPA 1033 4.6.5 Formulate an opinion concerning origin, cause, or responsibility for the fire, given all investigative findings, so that the opinion regarding origin, cause, or responsibility for a fire is supported by the data, facts, records, reports, documents, and evidence.

(A) Requisite Knowledge. Analytical methods and procedures (e.g., hypothesis development and testing, systems analysis, time lines, link analysis, fault tree analysis, and data reduction matrixing).

(B) Requisite Skills. Analytical and assimilation skills.

501-19.1 *The Investigator candidate shall describe methods for analyzing the incident for cause and responsibility.*

- 19.1.1 Cause of the fire or explosion
- 19.1.2 Cause of damage to property
- 19.1.3 Cause of bodily injury or loss of life
- 19.1.4 Degree to which human fault contributed

501-19.2 ***The Investigator candidate shall describe the causes of fires or explosions.***

- 19.2.1 Classification of the cause
 - 19.2.1.1 Accidental fire cause
 - 19.2.1.2 Natural fire cause
 - 19.2.1.3 Incendiary fire cause
 - 19.2.1.4 Undetermined fire cause

501-19.3 ***The Investigator candidate shall describe the causes of damage to property from the Incident.***

- 19.3.1 Considerations

- 19.3.2 Fire and smoke spread
 - 19.3.2.1 Compartmentation
 - 19.3.2.2 Change of occupancy/hazard
 - 19.3.2.3 Detection/alarm systems
 - 19.3.2.4 Human behavior
 - 19.3.2.5 Fire suppression
 - 19.3.2.6 Fuel loads
 - 19.3.2.7 Housekeeping
 - 19.3.2.8 Ventilation
 - 19.3.2.9 Code violations
 - 19.3.2.10 Structural failure

- 19.3.3 Other consequential damage

501-19.4 ***The Investigator candidate shall describe the causes of bodily injury or loss of life.***

- 19.4.1 Fire and smoke spread
 - 19.4.1.1 Toxicity
 - 19.4.1.2 Hazardous materials
 - 19.4.1.3 Compartmentation
 - 19.4.1.4 Change of occupancy/hazard
 - 19.4.1.5 Detection/alarm systems
 - 19.4.1.6 Human behavior
 - 19.4.1.7 Fire suppression
 - 19.4.1.8 Housekeeping
 - 19.4.1.9 Fuel loads
 - 19.4.1.10 Ventilation
 - 19.4.1.11 Code violations
 - 19.4.1.12 Means of egress/refuge
 - 19.4.1.13 Structural failure

19.4.1.14 Intentional acts

19.4.2 Emergency preparedness

501-19.5 ***The Investigator candidate shall describe the determination of responsibility.***

19.5.1 Nature of responsibility

19.5.2 Definition of responsibility

19.5.3 Assessing of responsibility

19.5.4 Degrees of responsibility

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SECTION 20

FAILURE ANALYSIS AND ANALYTICAL TOOLS

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.1 Gather reports and records, given no special tools, equipment, or materials, so that all gathered documents are applicable to the investigation, complete, and authentic; the chain of custody is maintained; and the material is admissible in a legal proceeding.

(A) Requisite Knowledge. Types of reports needed that facilitate determining responsibility for the fire (e.g., police reports, fire reports, insurance policies, financial records, deeds, private investigator reports, outside photos, and videos) and location of these reports.

(B) Requisite Skills. Identify the reports and documents necessary for the investigation, implement the chain of custody, and organizational skills.

NFPA 1033 4.6.2 Evaluate the investigative file, given all available file information, so that areas for further investigation are identified, the relationship between gathered documents and information is interpreted, and corroborative evidence and information discrepancies are discovered.

(A) Requisite Knowledge. File assessment and/or evaluation methods, including accurate documentation practices, and requisite investigative elements.

(B) Requisite Skills. Information assessment, correlation, and organizational skills.

NFPA 1033 4.6.5 Formulate an opinion concerning origin, cause, or responsibility for the fire, given all investigative findings, so that the opinion regarding origin, cause, or responsibility for a fire is supported by the data, facts, records, reports, documents, and evidence.

(A) Requisite Knowledge. Analytical methods and procedures (e.g., hypothesis development and testing, systems analysis, time lines, link analysis, fault tree analysis, and data reduction matrixing).

(B) Requisite Skills. Analytical and assimilation skills.

501-20.1 **The Investigator candidate shall describe the failure analysis and analytical tools.**

501-20.2 **The Investigator candidate shall describe time lines for use in analyzing fire cause.**

20.2.1 General

20.2.2 Hard time (actual)

20.2.3 Soft time (estimated)

20.2.4 Benchmark events

20.2.5 Multiple time lines

501-20.3 ***The Investigator candidate shall describe system analysis techniques.***

20.3.1 Fault trees

20.3.2 Failure mode and effects analysis (FMEA)

501-20.4 ***The Investigator candidate shall describe the purpose for mathematical modeling.***

20.4.1 General and limitations of mathematical modeling

20.4.2 Heat transfer analysis

20.4.3 Flammable gas concentrations

20.4.4 Hydraulic analysis

20.4.5 Thermodynamic chemical equilibrium analysis

20.4.6 Structural analysis

20.4.7 Egress analysis

20.4.8 Fire dynamics analysis

20.4.8.1 Specialized fire dynamic routines

20.4.8.2 Zone models

20.4.8.3 Field, computational fluid dynamics models (CFD)

500-20.5 ***The Investigator candidate shall describe the role of fire testing.***

20.5.1 Role of fire testing

20.5.2 Fire test methods

20.5.3 Limitations of fire testing

501-20.6 ***The Investigator candidate shall identify the data required for modeling and testing.***

20.6.1 Materials and contents

20.6.2 Ventilation

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SECTION 21

EXPLOSIONS

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.9 Discriminate the effects of explosions from other types of damage, given standard equipment and tools, so that an explosion is identified and its evidence is preserved.

(A) Requisite Knowledge. Different types of explosions and their causes, characteristics of an explosion, and the difference between low- and high-order explosions.

(B) Requisite Skills. Identify explosive effects on glass, walls, foundations, and other building materials; distinguish between low- and high-order explosion effects; and analyze damage to document the blast zone and origin.

501-21.1 ***The Investigator candidate shall define the term “explosion” and describe the various types of explosions.***

501-21.2 ***The Investigator candidate shall identify the different types of explosions.***

21.2.1 Mechanical explosion

21.2.2 Boiling liquid expanding vapor explosion (BLEVE)

21.2.3 Chemical explosion

21.2.4 Combustion explosion

21.2.5 Electrical explosion

21.2.6 Nuclear explosion

501-21.3 ***The Investigator candidate shall distinguish between the two types of explosions.***

21.3.1 Low-order damage

21.3.2 High-order damage

501-21.4 ***The Investigator candidate shall be able to describe the effects of explosions.***

- 21.4.1 Blast pressure front effect
 - 21.4.1.1 General
 - 21.4.1.2 Positive pressure phase
 - 21.4.1.3 Negative pressure phase
 - 21.4.1.4 Shape of blast front
 - 21.4.1.5 Rate of pressure rise

21.4.2 Shrapnel effect

21.4.3 Thermal effect

21.4.4 Seismic effect

501-21.5 ***The Investigator candidate shall identify the factors controlling explosion effects.***

21.5.1 Blast pressure front modification by reflection

21.5.2 Blast pressure front modification by refraction

501-21.6 ***The Investigator candidate shall be able to identify a seated explosion.***

21.6.1 General

21.6.2 Explosives

21.6.3 Boiler and pressure vessels

21.6.4 Confined fuel gas and liquid vapor

21.6.5 Boiling liquid expanding vapor explosion (BLEVE)

501-21.7 ***The Investigator candidate shall be able to identify a non-seated explosion.***

21.7.1 Fuel gases

21.7.2 Pool flammable/combustible liquids

21.7.3 Dusts

21.7.4 Backdraft or smoke explosion

501-21.8 ***The Investigator candidate shall be able to describe the characteristics of gas/vapor explosions.***

- 21.8.1 Minimum ignition energy
- 21.8.2 Interpretation of explosion damage
 - 21.8.2.1 Fuel-air ratio
 - 21.8.2.2 Vapor density
 - 21.8.2.3 Turbulence
 - 21.8.2.4 Nature of confining space
 - 21.8.2.5 Location and magnitude of ignition source
 - 21.8.2.6 Venting
- 21.8.3 Underground migration of fuel gases
- 21.8.4 Multiple explosions

501-21.9 ***The Investigator candidate shall describe the characteristics of dust explosions.***

- 21.9.1 General
- 21.9.2 Particle size
- 21.9.3 Concentration
- 21.9.4 Turbulence in dust explosions
- 21.9.5 Moisture
- 21.9.6 Minimum Ignition energy for dust
- 21.9.7 Multiple explosions

501-21.10 ***The Investigator candidate shall be able to define backdraft or smoke explosions.***

501-21.11 ***The Investigator candidate shall be able to identify an outdoor vapor cloud explosion.***

501-21.12 ***The Investigator candidate shall be able to distinguish the two types of explosives.***

- 21.12.1 Low explosives

- 21.12.2 High explosives
- 21.12.3 Investigation of explosive incidents

501-21.13 ***The Investigator candidate shall be able to investigate the explosion scene.***

- 21.13.1 General
- 21.13.2 Securing the scene
 - 21.13.2.1 Establishing the scene
 - 21.13.2.2 Obtain background information
 - 21.13.2.3 Establish the scene search pattern
 - 21.13.2.4 Safety at the explosion scene
- 21.13.3 Initial scene assessment
 - 21.13.3.1 General
 - 21.13.3.2 Identify explosion or fire
 - 21.13.3.3 Low or high-order damage
 - 21.13.3.4 Seated or nonseated explosion
 - 21.13.3.5 Identify type of explosion
 - 21.13.3.6 Identify potential general fuel type
 - 21.13.3.7 Establish the origin
 - 21.13.3.8 Establish the fuel source and explosion type
 - 21.13.3.9 Establish ignition source
- 21.13.4 Detailed scene assessment
 - 21.13.4.1 Identify damage effects of explosion
 - 21.13.4.2 Identify preblast and postblast fire damage
 - 21.13.4.3 Locate and identify articles of evidence
 - 21.13.4.4 Identify force vectors

501-21.14 ***The Investigator candidate shall be able to analyze the origin (epicenter) of an explosion scene.***

501-21.15 ***The Investigator candidate shall be able to analyze a fuel source.***

501-21.16 ***The Investigator candidate shall be able to analyze the ignition source.***

501-21.17 ***The Investigator candidate shall be able to analyze to establish cause.***

- 21.17.1 General
- 21.17.2 Time line analysis
- 21.17.3 Damage pattern analysis
 - 21.17.3.1 Debris analysis
 - 21.17.3.2 Relative structural damage analysis
- 21.17.4 Correlation of blast yield with damage incurred
- 21.17.5 Analysis of damaged items and structures
- 21.17.6 Correlation of thermal effects

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SECTION 22

INCENDIARY FIRES

4.6 Post-Incident Investigation.

Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

NFPA 1033 4.6.4 Establish evidence as to motive and/or opportunity, given an incendiary fire, so that the evidence is supported by documentation and meets the evidentiary requirements of the jurisdiction.

(A) Requisite Knowledge. Types of motives common to incendiary fires, methods used to discover opportunity, and human behavioral patterns relative to fire-setting.

(B) Requisite Skills. Financial analysis, records gathering and analysis, interviewing, and interpreting fire scene information and evidence for relationship to motive and/or opportunity.

501-22.1 **The Investigator candidate shall define “incendiary” fires.**

501-22.2 **The Investigator candidate shall identify and describe indicators of incendiary fires.**

- 22.2.1 Multiple fires
- 22.2.2 Trailers
- 22.2.3 Lack of expected fuel load and ignition sources
- 22.2.4 Exotic accelerants
- 22.2.5 Unusual fuel load or configuration
- 22.2.6 Burn injuries
- 22.2.7 Incendiary devices
 - 22.2.7.1 Examples of incendiary devices
 - 22.2.7.2 Delay devices
 - 22.2.7.3 Presence of ignitable liquids in area of origin
- 22.2.8 Assessment of fire growth and fire damage

501-22.3 **The Investigator candidate shall identify and explain potential indicators of incendiary fires not directly related to combustion.**

- 22.3.1 Remote locations with view blocked or obscured

- 22.3.2 Fires near service equipment and appliances
- 22.3.3 Removal or replacement of contents prior to the fire
 - 22.3.3.1 Replacement
 - 22.3.3.2 Removal
 - 22.3.3.3 Absences of personal items prior to the fire
- 22.3.4 Entry blocked or obstructed
- 22.3.5 Sabotage to the structure or fire protection systems
 - 22.3.5.1 Definition of "sabotage"
 - 22.3.5.2 Damage to fire-resistive assemblies
 - 22.3.5.3 Damage to fire protection systems
- 22.3.6 Open windows and exterior doors

501-22.4 ***The Investigator candidate shall identify and describe other evidentiary factors associated with incendiary fires.***

- 22.4.1 Evidentiary factors that should be recorded and examined
- 22.4.2 Analysis of confirmed incendiary fires
 - 22.4.2.1 Geographic areas or clusters
 - 22.4.2.2 Temporal frequency
 - 22.4.2.3 Materials and method
- 22.4.3 Evidence of other crimes and crime concealment
- 22.4.4 Indicators of financial stress
- 22.4.5 Existing or history of code violations
- 22.4.6 Owner with fires at other properties
- 22.4.7 Over-insurance
- 22.4.8 Timed opportunity
 - 22.4.8.1 Fires during severe natural conditions
 - 22.4.8.2 Fires during civil unrest
 - 22.4.8.3 Fire department unavailable
- 22.4.9 Motives for fire setting behavior
 - 22.4.9.1 Define "motive"

- 22.4.9.2 Motive verses intent
- 22.4.9.3 Classifications of motive
 - 22.4.9.3.1 Introduction
 - 22.4.9.3.2 Vandalism
 - a. Willful and malicious mischief
 - b. Peer or group pressure
 - 22.4.9.3.3 Excitement
 - a. Thrill seeking
 - b. Attention seeking
 - c. Recognition
 - d. Sexual gratification or perversion
 - 22.4.9.3.4 Revenge
 - a. Personal retaliation
 - b. Societal retaliation
 - c. Institutional retaliation
 - d. Group retaliation
 - 22.4.9.3.5 Crime Concealment
 - a. Murder concealment
 - b. Burglary concealment
 - c. Destruction of records or documents
 - 22.4.9.3.6 Profit
 - 22.4.9.3.7 Extremism
 - a. Terrorism
 - b. Riot/civil disturbance

SECTION 23

FIRE AND EXPLOSION DEATHS AND INJURIES

4.4 Evidence Collection/Preservation.

Duties shall include using proper physical and legal procedures to retain evidence required within the investigation.

NFPA 1033 4.4.1 Utilize proper procedures for managing victims and fatalities, given a protocol and appropriate personnel, so that all evidence is discovered and preserved and the protocol procedures are followed.

(A) Requisite Knowledge. Types of evidence associated with fire victims and fatalities and evidence preservation methods.

(B) Requisite Skills. Observational skills and the ability to apply protocols to given situations.

501-23.1 **The Investigator candidate shall be prepared to deal with death and injuries from fire and explosions.**

501-23.2 **The Investigator candidate shall identify the elements of a death scene investigation.**

- 23.2.1 Fire suppression
- 23.2.2 Documentation
- 23.2.3 Notification
- 23.2.4 Recovery of bodies and evidence

501-23.3 **The Investigator candidate shall describe death-related pathological and toxicological examinations.**

- 23.3.1 X-rays
- 23.3.2 Carbon monoxide levels
- 23.3.3 Presence of other toxic products
- 23.3.4 Smoke and soot exposure
- 23.3.5 Burns
- 23.3.6 Consumption of the body by fire

501-23.4 ***The Investigator candidate shall describe the fundamental issues of death investigations.***

- 23.4.1 Remains identification
- 23.4.2 Victim identification
- 23.4.3 Cause of death
- 23.4.4 Manner of death
- 23.4.5 Victim activity
- 23.4.6 Postmortem changes

501-23.5 ***The Investigator candidate shall describe the mechanism of death.***

- 23.5.1 Carbon monoxide
- 23.5.2 Thermal effects
 - 23.5.2.1 Hyperthermia
 - 23.5.2.2 Inhalation of hot gases
- 23.5.3 Other toxic gases
- 23.5.4 Soot and smoke
- 23.5.5 Hypoxia

501-23.6 ***The Investigator candidate shall describe postmortem tests and documentation.***

- 23.6.1 Blood
- 23.6.2 Internal tissue
- 23.6.3 External tissue
- 23.6.4 Stomach contents
- 23.6.5 Airways
- 23.6.6 Internal body temperatures

- 23.6.7 X-rays
- 23.6.8 Clothing and personal effects
- 23.6.9 Photographs
- 23.6.10 Diagrams of burn and injuries
- 23.6.11 Documentation of major physical trauma and wounds
- 23.6.12 Sexual assault evidence
- 23.6.13 Collection and preservation of other physical evidence

501-23.7 ***The Investigator candidate shall describe fire and explosion injuries.***

- 23.7.1 Physical evidence
 - 23.7.1.1 Clothing
 - 23.7.1.2 Furnishings
 - 23.7.1.3 Ignition sources
 - 23.7.1.4 Notification laws
- 23.7.2 Medical evidence (burns)
 - 23.7.2.1 Degree of burn
 - 23.7.2.2 Body area (distribution)
 - 23.7.2.3 Documentation
 - 23.7.2.4 Mechanism of burn injury
- 23.7.3 Medical evidence (inhalation)
 - 23.7.3.1 Sub-lethal inhalation exposure effects on the individual
 - 23.7.3.2 Narcotic gases
 - 23.7.3.3 Irritant gases
 - 23.7.3.4 Smoke
 - 23.7.3.5 Hospital tests and documentation
- 23.7.4 Access to medical evidence

501-23.8 ***The Investigator candidate shall describe the mechanism of inhalation injuries.***

- 23.8.1 Elimination of carbon monoxide by oxygen/air
- 23.8.2 Explosion-related injuries

- 23.8.2.1 Blast pressure injuries
- 23.8.2.2 Shrapnel injuries
- 23.8.2.3 Thermal injuries
- 23.8.2.4 Seismic effect injuries

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SECTION 24

APPLIANCES

4.2 Scene Examination.

Duties shall include inspecting and evaluating the fire scene, or evidence of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and act or activity that brought ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

NFPA 1033 4.2.8 Inspect the performance of building systems, including detection, suppression, HVAC, utilities, and building compartmentation, given standard and special equipment and tools, so that a determination can be made as to the need for expert resources, an operating system's impact on fire growth and spread is considered in identifying origin areas, defeated and/or failed systems are identified, and the system's potential as a fire cause is recognized.

(A) Requisite Knowledge. Different types of detection, suppression, HVAC, utility, and building compartmentation such as fire walls and fire doors; types of expert resources for building systems; the impact of fire on various systems; common methods used to defeat a system's functional capability; and types of failures.

(B) Requisite Skills. Determine the system's operation and its effect on the fire; identify alterations to, and failure indicators of, building systems; and evaluate the impact of suppression efforts on building systems.

501-24.1 ***The Investigator candidate shall analyze appliances as it relates to investigation of the cause of fires.***

501-24.2 ***The Investigator candidate shall be able to record the scene involving an appliance.***

- 24.2.1 Recording specific appliances
- 24.2.2 Measurements of the location of the appliances
- 24.2.3 Positions of appliance controls
- 24.2.4 Document appliance information
- 24.2.5 Gathering all of the parts from the appliance

501-24.3 ***The Investigator candidate shall analyze the origin of appliances.***

- 24.3.1 Relationship of the appliance to the origin
- 24.3.2 Fire patterns

24.3.3 Plastic appliance components

24.3.4 Reconstruction of the area of origin

501-24.4 ***The Investigator candidate shall analyze the cause involving appliances.***

24.4.1 How the appliance generated heat

24.4.2 The use and design of the appliance

24.4.3 Electrical appliances as ignition sources

24.4.4 Photographing appliance disassembly

24.4.5 Obtaining exemplar appliances

24.4.6 Testing exemplar appliances

501-24.5 ***The Investigator candidate shall describe each of the common parts or components that might be found in various appliances.***

24.5.1 Appliance housings

24.5.2 Power sources

24.5.2.1 Power cords

24.5.2.2 Voltages less than 120

24.5.2.3 Batteries

24.5.2.4 Overcurrent protection

24.5.3 Switches

24.5.3.1 Manual switches

24.5.3.2 Automatic switches

24.5.4 Solenoids and relays

24.5.5 Transformers

24.5.6 Motors

24.5.7 Heating elements

24.5.8 Lighting

- 24.5.8.1 Fluorescent lighting systems
- 24.5.8.2 High intensity discharge lighting systems

24.5.9 Miscellaneous components

501-24.6 ***The Investigator candidate shall describe the operation and components of common residential appliances.***

- 24.6.1 Range or oven
- 24.6.2 Coffee makers
- 24.6.3 Toaster
- 24.6.4 Electric can opener
- 24.6.5 Refrigerator
- 24.6.6 Dishwasher
- 24.6.7 Microwave oven
- 24.6.8 Portable space heater
- 24.6.9 Electric blanket
- 24.6.10 Window air conditioner unit
- 24.6.11 Hair dryer and hair curler
- 24.6.12 Clothes iron
- 24.6.13 Clothes dryer
- 24.6.14 Consumer electronics
- 24.6.15 Lighting

SECTION 25

MOTOR VEHICLE FIRES

Annex A Explanatory Material

NFPA 1033 A.1.1 The intent of this standard applies to all fire investigation, including outside, wildland, vehicle, and structural fires.

501-25.1 ***The Investigator candidate shall describe the factors related to investigation of fires involving motor vehicles.***

501-25.2 ***The Investigator candidate shall describe the role vehicle investigation safety.***

501-25.3 ***The Investigator candidate shall describe and identify the different fuels in vehicle fires.***

25.3.1 Ignitable liquids

25.3.2 Gaseous fuels

25.3.3 Solid fuels

501-25.4 ***The Investigator candidate shall describe and identify the different ignition sources.***

25.4.1 Open flames

25.4.2 Electrical sources

25.4.2.1 Recreational vehicles

25.4.2.2 Overloaded wiring

25.4.2.3 Electrical high resistance connections

25.4.2.4 Electrical short circuits and arcs (electric discharge)

25.4.2.5 Arc (carbon) tracking

25.4.2.6 Lamp bulbs and filaments

25.4.2.7 External electrical sources used in vehicles

25.4.3 Hot surfaces

25.4.4 Mechanical sparks

25.4.5 Smoking materials

501-25.5 ***The Investigator shall identify the different types of systems and their function.***

- 25.5.1 Fuel system
 - 25.5.1.1 Vacuum/low pressure carbureted systems
 - 25.5.1.2 High-pressure fuel-injected systems
 - 25.5.1.3 Diesel fuel system
 - 25.5.1.4 Natural gas
 - 25.5.1.5 Propane fuel
 - 25.5.1.6 Turbochargers
- 25.5.2 Emission control system
- 25.5.3 Motor vehicle electrical systems
- 25.5.4 Mechanical power systems
 - 25.5.4.1 Lubrication systems
 - 25.5.4.2 Liquid cooling systems
 - 25.5.4.3 Air-cooled systems
 - 25.5.4.4 Electric motors
- 25.5.5 Mechanical power distribution
 - 25.5.5.1 Mechanically geared transmissions
 - 25.5.5.2 Hydraulically geared transmission
- 25.5.6 Accessories to the mechanical power system
- 25.5.7 Hydraulic braking system
- 25.5.8 Windshield washer systems

501-25.6 ***The Investigator candidate shall identify the different body systems on motor vehicles.***

- 25.6.1 Interior finishes and accessories
- 25.6.2 Cargo areas

501-25.7 ***The Investigator candidate shall identify the methods of recording the motor vehicle fire scene.***

- 25.7.1 Vehicle identification
- 25.7.2 Vehicle fire scene history
- 25.7.3 Vehicle particulars

- 25.7.4 Documenting the scene
- 25.7.5 Documenting the vehicle away from the scene

501-25.8 ***The Investigator candidate shall describe the methods of motor vehicle examination.***

- 25.8.1 General
- 25.8.2 Examination of vehicle systems
- 25.8.3 Switches, handles, and levers

501-25.9 ***The Investigator candidate shall define “total burns” as it relates to motor vehicle fires.***

501-25.10 ***The Investigator candidate shall identify Special Considerations for Incendiary Vehicle Fires.***

501-25.11 ***The Investigator candidate shall be able to examine vehicle fires in structures.***

501-25.12 ***The Investigator candidate shall be able to incorporate the many similarities between recreational vehicles and motor homes and to houses and mobile homes.***

501-25.13 ***The Investigator candidate shall identify heavy equipment.***

- 25.13.1 Medium and heavy-duty trucks and buses
- 25.13.2 Mass transit vehicles
- 25.13.3 Earth-moving equipment
- 25.13.4 Forestry/logging equipment
- 25.13.5 Landfill equipment
- 25.13.6 Agricultural equipment

501-25.14 ***The Investigator candidate shall identify and gather information specific to the hybrid vehicle.***

- 25.14.1 Hybrid vehicle investigation safety

25.14.2 Hybrid vehicle technology

25.14.3 Investigation of hybrid vehicle fires

501-25.15 ***The Investigator candidate shall identify and document the nature of post incident damage prior to towing.***

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SECTION 26

WILDFIRE INVESTIGATIONS

Annex A Explanatory Material

NFPA 1033 A.1.1 The intent of this standard applies to all fire investigation, including outside, wildland, vehicle, and structural fires.

501-26.1 ***The Investigator candidate shall identify agencies that provide technical assistance and expertise related to wildfires.***

- 26.1.1 Texas Forest Service/United States Forest Service
- 26.1.2 State and/or federal park agencies

501-26.2 ***The Investigator candidate shall identify and describe wildfire fuels.***

- 26.2.1 Flammability analysis
- 26.2.2 Ground fuels
 - 26.2.2.1 Duff
 - 26.2.2.2 Roots
 - 26.2.2.3 Dead leaves and coniferous litter
 - 26.2.2.4 Grass, weeds and other small plants
 - 26.2.2.5 Fine dead wood
 - 26.2.2.6 Downed logs, stumps and large limbs
 - 26.2.2.7 Low brush and reproduction vegetation
- 26.2.3 Aerial fuels
 - 26.2.3.1 Tree branches and crowns
 - 26.2.3.2 Snags
 - 26.2.3.3 Tree moss
 - 26.2.3.4 High brush

501-26.3 ***The Investigator candidate shall identify and describe factors affecting wildfire spread.***

- 26.3.1 Lateral confinement
- 26.3.2 Wind influence
 - 26.3.2.1 Meteorological
 - 26.3.2.2 Diurnal winds
 - 26.3.2.3 Fire winds

- 26.3.3 Fire head
- 26.3.4 Fire heel
- 26.3.5 Fuel influence
 - 26.3.5.1 Species of vegetation
 - 26.3.5.2 Fuel size
 - 26.3.5.3 Moisture content
 - 26.3.5.4 Oil content
 - 26.3.5.5 Fuel types
- 26.3.6 Topography
 - 26.3.6.1 Slope
 - 26.3.6.2 Aspect
- 26.3.7 Weather
 - 26.3.7.1 Weather history
 - 26.3.7.2 Temperature
 - 26.3.7.3 Relative humidity
- 26.3.8 Suppression
 - 26.3.8.1 Fire breaks
 - 26.3.8.2 Air drops
 - 26.3.8.3 Firing out
 - 26.3.8.4 Class A foam
- 26.3.9 Other natural mechanisms of fire spread
 - 26.3.9.1 Wind-borne embers and firebrands
 - 26.3.9.2 Fire storms
- 26.3.10 Wildland-urban interface
- 26.3.11 Animals

501-26.4 ***The Investigator candidate shall identify, describe and interpret indicators used in determining the direction of travel of a wildfire.***

- 26.4.1 Wildfire V-shaped patterns
- 26.4.2 Degree of damage
- 26.4.3 Grass stems

- 26.4.4 Brush
 - 26.4.4.1 Ash deposits
 - 26.4.4.2 Cupping
 - 26.4.4.3 Die-out patterns
- 26.4.5 Trees
 - 26.4.5.1 Trunk char
 - 26.4.5.2 Crown damage
- 26.4.6 Non-combustibles
 - 26.4.6.1 Exposed and protected fuels
 - 26.4.6.2 Staining and sooting
 - 26.4.6.3 Loss of material

501-26.5 ***The Investigator candidate shall identify methods of conducting an origin investigation of a wildfire.***

- 26.5.1 Initial area of investigation
 - 26.5.1.1 Observations of reporting parties
 - 26.5.1.2 Observations of initial attack crews
 - 26.5.1.3 Observations of airborne personnel
 - 26.5.1.4 Observations of other witnesses
 - 26.5.1.5 Satellite imaging and remote sensing
- 26.5.2 Search techniques
 - 26.5.2.1 Protection of fire scene
 - 26.5.2.2 Identifying evidence
 - 26.5.2.3 Analyzing fire spread
 - 26.5.2.4 Origin area
 - 26.5.2.4.1 Segment division
 - 26.5.2.4.2 Loop technique
 - 26.5.2.4.3 Grid technique
 - 26.5.2.4.4 Lane technique
- 26.5.3 Search equipment
 - 26.5.3.1 Magnifying glass
 - 26.5.3.2 Magnet
 - 26.5.3.3 Straight edge
 - 26.5.3.4 Probe
 - 26.5.3.5 Comb
 - 26.5.3.6 Handheld lights
 - 26.5.3.7 Air blower
 - 26.5.3.8 Metal detectors
 - 26.5.3.9 Sifting screen
 - 26.5.3.10 Global Positioning Satellite (GPS) Recorder

501-26.6 ***The Investigator candidate shall identify and describe the importance of security of the area or point of origin of a wildfire.***

500-26.7 ***The Investigator candidate shall identify causes of wildfires.***

- 26.7.1 Natural causes
 - 26.7.1.1 Lightening
 - 26.7.1.2 Spontaneous heating

- 26.7.2 Human fire causes
 - 26.7.2.1 Campsite
 - 26.7.2.2 Smoking
 - 26.7.2.3 Debris burning
 - 26.7.2.4 Sunlight and glass refraction
 - 26.7.2.5 Incendiary
 - 26.7.2.6 Prescribed fire (controlled burn)
 - 26.7.2.7 Machinery and vehicles
 - 26.7.2.8 Railroad
 - 26.7.2.9 Juveniles
 - 26.7.2.10 Fireworks

- 26.7.3 Utilities
 - 26.7.3.1 Electricity
 - 26.7.3.2 Oil and gas drilling

501-26.8 ***The Investigator candidate shall understand that evidence preservation, collection, and documentation is similar at wildfires as with any other fire.***

501-26.9 ***The Investigator candidate shall identify special safety considerations associated with investigation of wildfires.***

- 26.9.1 Hazards

- 26.9.2 Personal protective equipment

501-26.10 ***The Investigator candidate shall aware of sources of information on wildfire fire investigation***

SECTION 27

MANAGEMENT OF COMPLEX INVESTIGATIONS

4.1 General

NFPA 1033 4.1.6 The fire investigator shall understand the organization and operation of the investigative team within an incident management system.

501-27.1 ***The Investigator candidate shall be able to address those issues that are unique to managing investigations that are complex due to size, scope, or duration.***

27.1.1 Governmental inquiry

27.1.2 Intent

27.1.3 Purpose

27.1.4 Interested parties

27.1.5 Definitions

501-27.2 ***The Investigator candidate shall be familiar with the basic information and documents.***

501-27.3 ***The Investigator candidate shall understand the importance of communications among interested parties.***

27.3.1 Notice to interested parties

27.3.1.1 Entity in control

27.3.1.2 All interested parties

27.3.1.3 Roster of interested parties

27.3.1.4 Notification of changes

27.3.1.5 Making notification

27.3.1.6 Content of notification

27.3.1.7 Subsequent notifications

27.3.2 Meetings

27.3.2.1 Preliminary meeting

27.3.2.2 Meetings as the investigation progresses

27.3.2.3 Website

27.3.2.4 Additional dissemination of information

501-27.4 ***The Investigator candidate shall understand the complexity of the investigation and to ensure that all known interested***

parties are afforded an opportunity to investigate the incident and protect their respective interests, understandings or agreements.

- 27.4.1 Purposes
- 27.4.2 Scheduling
- 27.4.3 Cost sharing
- 27.4.4 Non-disclosure agreements
- 27.4.5 Protocols
- 27.4.6 Information sharing
- 27.4.7 Interviews
- 27.4.8 Amendments to agreement
- 27.4.9 Disagreements

501-27.5 The Investigator candidate shall identify and describe the component of managing a complex investigation.

- 27.5.1 Organizational models
- 27.5.2 Control of the site and scene
 - 27.5.2.1 Securing the site and scene
 - 27.5.2.2 Delegation of control
 - 27.5.2.3 Transfer of control
 - 27.5.2.4 Site and scene access
 - 27.5.2.4.1 Control of the site
 - 27.5.2.4.2 Establishing procedures for access
 - 27.5.2.4.3 Monitoring entry to the site
 - 27.5.2.4.4 Access control
 - 27.5.2.4.5 Escorts
 - 27.5.2.4.6 Public sector concerns
 - 27.5.2.4.7 Occupant access and control
 - 27.5.2.4.8 Decontamination in and out
 - 27.5.2.5 Site-specific restrictions or requirements
 - 27.5.2.6 Scene integrity
 - 27.5.2.7 Release of information

501-27.6 ***The Investigator candidate shall understand the unique components of handling evidence of a complex investigation.***

- 27.6.1 Evidence control
 - 27.6.1.1 Evidence custodian
 - 27.6.1.2 Interested party responsibility
- 27.6.2 Evidence removal from the scene
- 27.6.3 Evidence storage
- 27.6.4 Evidence inspections
 - 27.6.4.1 Non-destructive inspections
 - 27.6.4.2 Destructive inspections
 - 27.6.4.3 Testing of evidence

501-27.7 ***The Investigator candidate shall be able to supply logistical support while facilitating the complex investigation.***

- 27.7.1 Transportation
- 27.7.2 Equipment
- 27.7.3 Investigation site security
- 27.7.4 Decontamination
- 27.7.5 Environmental
- 27.7.6 Communications
- 27.7.7 Sanitary and comfort needs
- 27.7.8 Trash disposal and removal
- 27.7.9 Snow and ice removal
- 27.7.10 Lighting
- 27.7.11 Evidence storage

501-27.8 ***The Investigator candidate shall understand the unique characteristics of safety at the complex investigation.***

SECTION 28

MARINE FIRE INVESTIGATION

Annex A Explanatory Material

NFPA 1033 A.1.1 The intent of this standard applies to all fire investigation, including outside, wildland, vehicle, and structural fires.

501-28.1 ***The Investigator candidate shall understand the factors related to the investigations of fires involving recreational boats, generally defined as less than 65 feet in length.***

501-28.2 ***The Investigator candidate shall define the following terms.***

28.2.1 Accommodation space

28.2.2 Adrift

28.2.3 Afloat

28.2.4 Aground

28.2.5 Below

28.2.6 Boat

28.2.7 Bulkhead

28.2.8 Cabin

28.2.9 Capsize

28.2.10 Deck

28.2.11 Dock

28.2.12 Dorade vent

28.2.13 Fender

28.2.14 Forward

28.2.15 Gallery

- 28.2.16 Gear
- 28.2.17 Hatch
- 28.2.18 Hold
- 28.2.19 Hull
- 28.2.20 Inboard
- 28.2.21 Inboard/outboard
- 28.2.22 Outboard
- 28.2.23 Overboard
- 28.2.24 Shore power
- 28.2.25 Sole
- 28.2.26 Starboard
- 28.2.27 Superstructure
- 28.2.28 Topside
- 28.2.29 Transom
- 28.2.30 Underway
- 28.2.31 Vessel
- 28.2.32 Waterline

501-28.3 ***The Investigator candidate shall understand the importance of boat investigation safety.***

- 28.3.1 Safety assessment
- 28.3.2 Inspection of boats on land
- 28.3.3 Inspection of boats afloat
- 28.3.4 Underwater inspections

- 28.3.5 Specific safety concerns
 - 28.3.5.1 Confined spaces
 - 28.3.5.2 Airborne particulates
 - 28.3.5.3 Identify and assess energy sources
 - 28.3.5.3.1 Batteries
 - 28.3.5.3.2 Inverters
 - 28.3.5.3.3 Shore power
 - 28.3.5.4 Fuel leaks
 - 28.3.5.5 Sewage holding tank
 - 28.3.5.6 Hydrogen gas
 - 28.3.5.7 Other hydrocarbon contaminants
 - 28.3.5.8 Stability
 - 28.3.5.9 Damage to the structure of the boat
 - 28.3.5.10 Wharves, docks, and jetties
 - 28.3.5.11 Submerged boat
 - 28.3.5.12 Visual distress signals and pyrotechnics
- 28.3.6 Openings

501-28.4 ***The Investigator candidate shall identify the different marine systems and functions.***

- 28.4.1 Fuel systems: propulsion and auxiliary
 - 28.4.1.1 Vacuum/low pressure carbureted
 - 28.4.1.2 High pressure/marine fuel injection
 - 28.4.1.3 Diesel
- 28.4.2 Fuel systems: cooking and heating
 - 28.4.2.1 Liquefied petroleum gases
 - 28.4.2.2 Compressed natural gas
 - 28.4.2.3 Alcohol
 - 28.4.2.4 Solid fuels
 - 28.4.2.5 Diesel
- 28.4.3 Turbochargers/super chargers
- 28.4.4 Exhaust system
- 28.4.5 Electrical system
- 28.4.6 Engine cooling system
- 28.4.7 Ventilation
- 28.4.8 Transmissions

28.4.9 Accessories

501-28.5 ***The Investigator candidate shall identify the exterior construction of the vessel.***

28.5.1 Hull construction

28.5.2 Superstructure construction material

28.5.3 Deck

28.5.4 Exterior accessories

501-28.6 ***The Investigator candidate shall identify the interior construction of the vessel.***

28.6.1 Construction materials

28.6.2 Finishes

28.6.2.1 Accommodation furnishings

28.6.2.2 Interior accessories

28.6.2.3 Engine/machinery compartments

28.6.2.4 Flammable/explosive vapor detectors

28.6.2.5 Storage and holds

28.6.2.6 Fuel tanks

501-28.7 ***The Investigator candidate shall identify the propulsion system of the vessel.***

28.7.1 Electric systems

28.7.2 Fuels for boats with motorized propulsion systems

28.7.2.1 Fuel systems

28.7.2.2 Appliance fuel systems

28.7.2.3 Electric generators

28.7.3 Other fuel systems used for propulsion

501-28.8 ***The Investigator candidate shall identify common ignition sources found in marine vessels.***

28.8.1 Open flames

28.8.2 Electrical sources

- 28.8.2.1 Overloaded wiring
- 28.8.2.2 Electrical short circuiting and arcs
- 28.8.2.3 Electrical connections
- 28.8.2.4 Lightning
- 28.8.2.5 Static electricity and incendive arcs

- 28.8.3 Hot surfaces
 - 28.8.3.1 Manifolds
 - 28.8.3.2 Exhaust systems
 - 28.8.3.3 Cooking surfaces
 - 28.8.3.4 Heating systems

- 28.8.4 Mechanical
 - 28.8.4.1 Bearing failures
 - 28.8.4.2 Friction

- 28.8.5 Smoking materials

501-28.9 ***The Investigator candidate shall properly document the boat fire scene.***

- 28.9.1 On land

- 28.9.2 In water
 - 28.9.2.1 Moored
 - 28.9.2.2 Anchored and underway
 - 28.9.2.3 Underwater

- 28.9.3 Boat identification
 - 28.9.3.1 Hull Identification Number (HIN)
 - 28.9.3.2 Registration numbers
 - 28.9.3.3 US Coast Guard documentation numbers
 - 28.9.3.4 Boat name and hailing port
 - 28.9.3.5 Boat history
 - 28.9.3.6 Fire scene history

- 28.9.4 Boat particulars

501-28.10 ***The Investigator candidate shall identify the components of the boat examination.***

- 28.10.1 General

- 28.10.2 Examination of boat systems

501-28.11 ***The Investigator candidate shall describe marine fire investigations of boats in structures.***

501-28.12 ***The Investigator candidate shall describe legal considerations to marine fire investigations.***

DRAFT

SECTION 29

PRACTICAL EXERCISES

4.7 Presentations.

Duties shall include the presentation of findings to those individuals not involved in the actual investigations.

NFPA 1033 4.7.1 Prepare a written report, given investigative findings, documentation, and a specific audience, so that the report accurately reflects the investigative findings, is concise, expresses the investigator's opinion, contains facts and data that the investigator relies on in rendering an opinion, contains the reasoning of the investigator by which each opinion was reached, and meets the needs or requirements of the intended audience(s).

(A) Requisite Knowledge. Elements of writing, typical components of a written report, and types of audiences and their respective needs or requirements.

(B) Requisite Skills. Writing skills, ability to analyze information and determine the reader's needs or requirements.

NFPA 1033 4.7.2 Express investigative findings verbally, given investigative findings, notes, a time allotment, and a specific audience, so that the information is accurate, the presentation is completed within the allotted time, and the presentation includes only need-to-know information for the intended audience.

(A) Requisite Knowledge. Types of investigative findings, the informational needs of various types of audiences, and the impact of releasing information.

(B) Requisite Skills. Communication skills and ability to determine audience needs and correlate findings.

NFPA 1033 4.7.3 Testify during legal proceedings, given investigative findings, contents of reports, and consultation with legal counsel, so that all pertinent investigative information and evidence are presented clearly and accurately and the investigator's demeanor and attire are appropriate to the proceedings.

(A) Requisite Knowledge. Types of investigative findings, types of legal proceedings, professional demeanor requirements, and an understanding of due process and legal proceedings.

(B) Requisite Skills. Communication and listening skills and ability to differentiate facts from opinion and determine accepted procedures, practices, and etiquette during legal proceedings.

NFPA 1033 4.7.4 Conduct public informational presentations, given relevant data, so that information is accurate, is appropriate to the audience, and clearly supports the information needs of the audience.

(A) Requisite Knowledge. Types of data available regarding the fire loss problem and the issues about which the community must know.

(B) Requisite Skills. Ability to assemble, organize, and present information.

REFERENCE LIST FOR THE HAZARDOUS MATERIALS AWARENESS CURRICULUM

This Reference List is provided as a general guide for both instructors and students to locate information pertaining to the specific objectives in the TCFP Curriculum. This list is **not** all-inclusive and does not in any way limit TCFP development and use of questions to test the objectives of the curriculum:

Required References

Texts

- Code of Federal Regulations, Title 29 Part 1910.120, Appendix A.* United States. U.S. Department of Labor, Occupational Safety & Health Administration.
http://edocket.access.gpo.gov/cfr_2007/julqtr/pdf/29cfr1910.120.pdf
- Certification Curriculum Manual.* Texas Commission on Fire Protection. (Most current edition). Austin, TX: Texas Commission on Fire Protection.
- Emergency Response Guidebook.* United States. (Most current edition). Washington, DC: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration.
- Essentials of Fire Fighting **and Fire Department Operations**, 5th edition.* International Fire Service Training Association. (2008). Stillwater, OK: Fire Protection Publications, Oklahoma State University.
- Firefighter's Handbook: Essentials of Firefighting and Emergency Response, 3rd edition.* Delmar Publishers. (2008). Clifton Park, NY: Delmar, Cengage Learning.
- Fundamentals of Fire Fighter Skills, 2nd edition.* International Association of Fire Chiefs, & National Fire Protection Association. (2008). Sudbury, MA: Jones and Bartlett.
- Hazardous Materials Awareness and Operations.* DeBobes, L. J. (2009). Sudbury, MA: Jones & Bartlett.
- Hazardous Materials for First Responders, 3rd edition.* Adams, B., & Miller, L. A. (2004). Stillwater, OK: Fire Protection Publications, Oklahoma State University.
- Hazardous Materials Handbook: Awareness and Operations Levels.* Hawley, C., & Walter, A. (2008). Clifton Park, NY: Delmar, Cengage Learning.
- Hazardous Materials/Weapons of Mass Destruction Response Handbook, 5th edition.* Trebisacci, D. G. (2008). Quincy, MA: National Fire Protection Association.
- NFPA 472: Standard for Professional Competence of Responders to Hazardous Materials Incidents.* (2008 ed.). Quincy, MA: NFPA Publications. National Fire Protection Association
- Standards Manual for Fire Protection Personnel.* Texas Commission on Fire Protection. (Current edition). Austin, TX: Texas Commission on Fire Protection.

Recommended References

The most current edition of the following publications and media are recommended (not required) supplemental material for program use.

Texts

Hazardous Materials Field Guide, 2nd edition. Bevelacqua, A. S., & Stilp, R. H. (2007). Albany, NY: Delmar Publications.

Symbol Seeker: Hazard Identification Manual. Burns, P. P. (2002). Preston, England: Symbol Seeker.

Media

DOT Chart 13: Hazardous Materials Marking, Labeling and Placarding Guide. United States. (2007). Washington, DC: U.S. Dept. of Transportation, Pipeline and Hazardous Materials Safety Administration.

Emergency Response Guidebook 2008. [DVD]. United States. (2008). Washington, DC: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration.

Hazmat Awareness. Action Training Systems, Inc. (2008). [2 Disc DVD Set - Recognition & Identification]. Poulsbo, WA: Action Training Systems.

Hazardous Materials Awareness and Operations [DVD]. International Association of Fire Chiefs, & National Fire Protection Association. (2006). Sudbury, MA: Jones and Bartlett.

REFERENCE LIST FOR THE HAZARDOUS MATERIALS OPERATIONS - MISSION SPECIFIC COMPETENCIES CURRICULUM

This Reference List is provided as a general guide for both instructors and students to locate information pertaining to the specific objectives in the TCFP Curriculum. This list is **not** all-inclusive and does not in any way limit TCFP development and use of questions to test the objectives of the curriculum:

Required References

Texts

Certification Curriculum Manual. Texas Commission on Fire Protection. (Most current edition). Austin, TX: Texas Commission on Fire Protection.

Code of Federal Regulations, Title 29 Part 1910.120, Appendix A. United States. U.S. Department of Labor, Occupational Safety & Health Administration.
http://edocket.access.gpo.gov/cfr_2007/julqtr/pdf/29cfr1910.120.pdf

Emergency Response Guidebook. United States. (Most current edition). Washington, DC: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration.

Essentials of Fire Fighting and Fire Department Operations, 5th edition. International Fire Service Training Association. (2008). Stillwater, OK: Fire Protection Publications, Oklahoma State University.

Fire Fighter's Handbook of Hazardous Materials, 7th edition. Baker, Charles T., (2006). Sudbury, MA: Jones and Bartlett.

Firefighter's Handbook: Essentials of Firefighting and Emergency Response, 3rd edition. Delmar Publishers. (2008). Clifton Park, NY: Delmar, Cengage Learning.

Fundamentals of Fire Fighter Skills, 2nd edition. International Association of Fire Chiefs, & National Fire Protection Association. (2008). Sudbury, MA: Jones and Bartlett.

Hazardous Materials Awareness and Operations. DeBobes, L. J. (2009). Sudbury, MA: Jones & Bartlett.

Hazardous Materials for First Responders, 3rd edition. Adams, B., & Miller, L. A. (2004). Stillwater, OK: Fire Protection Publications, Oklahoma State University.

Hazardous Materials: Managing the Incident. Chester Noll, G. G., Hildebrand, M. S., & Yvorra, J. G. (2005). MD: Red Hat Publishing, Inc.

Hazardous Materials/Weapons of Mass Destruction Response Handbook, 5th edition. Trebisacci, D. G. (2008). Quincy, MA: National Fire Protection Association.

NFPA 472: Standard for Professional Competence of Responders to Hazardous Materials Incidents. (2008). Quincy, MA: NFPA Publications. National Fire Protection Association

NIOSH Pocket Guide to Chemical Hazards. National Institute for Occupational Safety and Health. (Most current edition). Cincinnati, OH: US Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. <http://www.cdc.gov/niosh/npg/>

Standards Manual for Fire Protection Personnel. Texas Commission on Fire Protection. (Most current edition). Austin, TX: Texas Commission on Fire Protection.

Recommended References

The most current edition of the following publications and media are recommended (not required) supplemental material for program use.

Texts

Bretherick's Handbook of Reactive Chemical Hazards. Urben, P. G., Pitt, M. J., & Bretherick, L. (2007). Amsterdam: Elsevier.

Chlorine Emergencies: An Overview for First Responders. Chlorine Institute. (2007). Arlington, VA: The Chlorine Institute.

CHRIS: Chemical Hazards Response Information System. United States. (1992). COMDTINST, M16465.11B. Washington, DC: U.S. Dept. of Transportation, U.S. Coast Guard.

Emergency Action Guides. Association of American Railroads. (2006). Pueblo, CO: Association of American Railroads.

Emergency Care for Hazardous Materials Exposure. Currance, P., Bronstein, A. C., & Clements, B. (2005). St. Louis, MO: Mosby.

Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads. (2009). Washington, DC: Association of American Railroads.

Field Guide to Tank Car Identification. Association of American Railroads. (2009). Washington, DC: Association of American Railroads.

Fire Protection Guide to Hazardous Materials. National Fire Protection Association. (2001). Quincy, MA: National Fire Protection Association.

Hawley's Condensed Chemical Dictionary. Lewis, R. J., & Hawley, G. G. (2007). West Sussex: Wiley.

Hazardous Materials Air Monitoring and Detection Devices. Hawley, C. (2002). Albany, NY: Delmar/Thomson Learning.

Hazardous Materials Field Guide, 2nd edition. Bevelacqua, A. S., & Stilp, R. H. (2007). Albany, NY: Delmar Publications.

Hazardous Materials: Managing the Incident Field Operations Guide. Chester Bevelacqua, A. S., Hildebrand, M. S., & Noll, G. G. (2005). MD: Red Hat Publishing, Inc.

How to Use the Chlorine Institute Emergency Kit "A" for 100 lb. and 150 lb. Chlorine Cylinders. Chlorine Institute. (1996). New York, NY: The Chlorine Institute.

How to Use the Chlorine Institute Emergency Kit "B" for Chlorine Ton Containers. Chlorine Institute. (1988). New York, NY: The Chlorine Institute.

How to Use the Chlorine Institute Emergency Kit "C" for Chlorine Tank Cars and Tank Trucks. Chlorine Institute. (1993). New York, NY: The Chlorine Institute.

Symbol Seeker: Hazard Identification Manual. Burns, P. P. (2002). Preston, England: Symbol Seeker.

Media

Hazardous Materials Containment Series. Action Training Systems. [4 Disc DVD Set] Hazardous materials containment - series of 4 titles. Seattle, WA: Action Training Systems.

Hazardous Materials: Managing the Incident DVD Series. Massingham, G., Noll, G. G., Hildebrand, M. S., & Noll, G. G. (2005). [8 Disc DVD Set] Edgartown, MA: Emergency Film Group.

10. Discussion and possible action on acceptance of gifts to the commission with a value in excess of \$500.00

The Ernest Emerson Fire Protection Resource Library (Emerson Library) got notice March 17, 2011 that it received a grant from State Farm Insurance under its *Safe Neighbors: Home Safety Grants Program*. State Farm Insurance will grant \$3,514.66 to the Emerson Library to support its *P3 Collection Development Program – Prevention, Planning, and Preparedness for Texans*. This grant will assist in the purchasing of new, high-quality fire and emergency prevention audio visual resources aimed at the children and senior citizens of Texas.

In 2009, nationwide, fires and burns were the third leading cause of unintentional fatal injuries to children age 14 or younger. The relative risk of individuals aged 65 and older of dying in a fire is 2.5 times greater than the general population. Parents, teachers, caregivers, senior groups, and local fire departments make up the usual fire prevention and planning instructors for children and seniors. These resources will be marketed directly to these instructors, with an emphasis on smaller, rural locations throughout the state. The library will follow up with borrowers to determine the usefulness and later effects on the served populations. Additionally, State Farm Insurance and the Emerson Library will coordinate an outreach program, with any other organizations willing, during Fire Prevention Week (October 2 – 8, 2011) to educate the citizens of Texas about these resources and their importance in keeping their communities and families safe.

The Emerson Library, and the Texas Commission on Fire Protection, would like to thank State Farm Insurance for its support of the library's collection and its dedication to keep Texans safe from fires and other emergencies.

- 11. Discussion and possible action on fire fighter injury data collected for 2010 for inclusion in the annual report to be sent to the State Fire Marshal's Office.**

Deborah Cowan

From: Mike Wisko [WiskoMik@cityofgalveston.org]
Sent: Monday, March 14, 2011 3:26 PM
To: Deborah Cowan
Cc: Jim Reidy
Subject: Recommendation for FFAC Agenda Item #8

Deborah,

Here is the list of recommendations our committee made last week regarding Agenda Item #8 **Firefighter Injury Data**

1. Increase training on Inspecting equipment and how to don and use PPE and SCBA's – Back to Basics
2. Ensure compliance of NFPA recommendations related to use of PPE and combine tactics with these recommendations.
3. Conduct objective critiques (post incident analysis) to identify actions that could contribute to Firefighter Injuries and identify ways to prevent these occurrences and injuries.
4. Review policies/procedures related to "In Station" operations and identify ways to reduce and prevent injuries which occur in the stations.

I hope this is helpful. Please call if you have any questions.

Thanks

Mike Wisko
Assistant Fire Chief
Galveston Fire Department
www.galvestonfire.com
PM/TIS
Texas Task Force 1

Ofc. 409-797-3850
Fax 409-797-3855
Cell 409-682-3091
E-mail wiskomik@cityofgalveston.org

12. Update from standards division director on matters relating to the activities of the following committees: International Fire Service Accreditation Congress, Respiratory Protection and Personal Alarm Equipment Committee, Fire Service Occupational Safety Committee, NFPA 1971 Technical Committee, and NFPA Technical Correlating Committee on Fire and Emergency Services Protective Clothing and Equipment.

13. Discussion and possible action on matters from the Executive Director.

A. Report on decisions of the Executive Director in contested cases and consent orders.

B. Status of division functions.

Texas Commission on Fire Protection
Results of Informal Conferences – Good Faith Clerical Error Letters
2011

RESULTS	NAME	DATE	ADMINISTRATIVE VIOLATION	SUMMARY
GFCE letter was mailed 1/13/2011	Lloyd Hatley	1/12/2011	Failed to certify prior to test expiration. Test expire in two years from date administered as per §439.1 (c) TAC	Determined a good faith clerical error on behalf of the Pasadena Fire Marshal's Office. Allowed to certify without retesting as per §419.034(e)(1) of the Government Code
GFCE letter was mailed 3/25/2011	Wynn C. Myers	3/24/2011	Failed to certify prior to test expiration. Test expire in two years from date administered as per §439.1 (c) TAC	Determined a good faith clerical error on behalf of the City of Hurst Fire Department. Allowed to certify without retesting as per §419.034(e)(1) of the Government Code
GFCE letter was mailed 3/25/2011	Brandon Clark	3/24/2011	Failed to certify prior to test expiration. Test expire in two years from date administered as per §439.1 (c) TAC	Determined a good faith clerical error on behalf of the Lewisville Fire Department. Allowed to certify without retesting as per §419.034(e)(1) of the Government Code
GFCE letter was mailed 3/25/2011	Bradley Nelson	3/30/2011	Failed to certify prior to test expiration. Test expire in two years from date administered as per §439.1 (c) TAC	Determined a good faith clerical error on behalf of the Lewisville Fire Department. Allowed to certify without retesting as per §419.034(e)(1) of the Government Code

14. Executive session pursuant to Government Code, Section 551.074, for the discussion of personnel matters: the appointment, employment, compensation, evaluation, reassignment, duties, discipline, or dismissal of the Executive Director, and appoint, employment, reassignment, or duties of personnel acting on an interim basis.

15. Open session for further discussion and possible action regarding preceding agenda item.

16. Adjourn meeting.