

Saskatchewan Evaluation and Certification Guide

Appendix G

NFPA 1033

Professional Qualifications for Fire Investigator

Revised 2021

Saskatchewan Public Safety Agency

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This document is an appendix to the Evaluation and Certification Guide. Use this Appendix in conjunction with the Guide.

Introduction

NFPA Standard 1002 Fire Apparatus Driver/Operator Professional Qualifications identifies the Job Performance Requirements (JPRs) and Knowledge Requirements that must be completed before a candidate may apply for certification. This document is part of the Saskatchewan Certification and Evaluation Guide (ECG). You should read the Guide before proceeding. You should read the Guide before proceeding. The Guide is on our website.

Qualifications and Certification Steps:

To gain certification as a Fire Investigator the candidate must:

1. Be a member in good standing of a Saskatchewan Fire Department or other eligible emergency service.
2. Be certified under NFPA 1001 Standard for Fire Fighter Professional Qualifications, Level 2 or possess comparable training and experience. Acceptable alternatives will include, at a minimum, formal training in fire behaviour, fire fighting techniques and practices as well as fireground health and safety. After a review of a candidate's alternate qualifications SPSA will either accept or reject them on a case-by-case basis.
3. Complete all NFPA 1033 JPR's through self-study, training on the job or through courses and seminars.
4. Successfully pass a 100 question written evaluation. The passing mark on written evaluations is 70%. Written evaluations will include questions based on numerous publications, documents and legislation, including - but not limited to - the following:
 - The Fire Prevention Act, 1992,
 - NFPA Standard 1033 - Professional Qualifications for Fire Investigator,
 - Saskatchewan Office of the Fire Commissioner Guide to Incident Reporting
 - NFPA 921 - Guide for Fire and Explosion Investigations (2008 edition)
 - IFSTA, Fire Investigator 2nd edition.
 - NFPA 13 – Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height
 - NFPA 14 – Standard for the Installation of Standpipe and Hose Systems
5. Successfully complete a practical evaluation conducted during the investigation of a fire scene. The fire scene used must be acceptable to SPSA. See Personal Protective Equipment below.
6. Successfully complete additional practical evaluation exercises based upon the JPR's outlined in this Appendix and in NFPA Standard 1033 – Professional Qualifications for Fire Investigator.

Personal Protective Equipment (PPE)

Candidates must provide their own protective equipment. PPE brought to a practical evaluation is subject to inspection and acceptance/rejection by SPSA. SCBA (if required) must be accompanied by maintenance and service records and be available for examination prior to use during a certification program. Other types of respiratory protection must meet the requirements of Occupational Health and Safety regulations. PPE and SCBA identified as a safety risk may not be used during a certification program. Candidates who do not have safe and adequate PPE will not be allowed to participate. The level of PPE required differs from investigation to investigation. Consult with SPSA evaluators about what PPE will be required.

Investigation Equipment

During practical evaluations participants must provide suitable equipment for conducting a fire investigation. Equipment is subject to examination and acceptance/rejection by SPSA. Suitable equipment is based upon local SOPs and generally accepted equipment standards identified by NFPA 921.

The JPR sheets provided in this document are a general guide to identifying the skills and knowledge a candidate will be evaluated against during the certification process. They are also a means for an individual to record their progress as they familiarize themselves with each JPR.

The **complete** NFPA standard must be **read** and **understood**. Each NFPA standard and each JPR within the standard have specific requisites that must be met. The standard lists the requisite skills and knowledge that a candidate must possess to be able to successfully complete the certification process.

Certification is based upon successfully completing the standard established by NFPA. Candidates are cautioned that they must be prepared for evaluation on all JPR's and Knowledge Requirements in the standard.

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>4.2 Scene Examination</p> <p>Duties shall include inspecting and evaluating the fire scene, or evidence of the fire 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.</p>		
<p>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.</p>	<p>4.2.1</p> <ul style="list-style-type: none"> • Fire ground hazards • Types of evidence • The importance of fire scene security • Evidence preservation • Issues relating to spoilation 	<ul style="list-style-type: none"> • Use of marking devices
<p>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.</p>	<p>4.2.2</p> <ul style="list-style-type: none"> • The types of building construction • The effects of fire upon construction materials • Types of evidence commonly found in the perimeter • Evidence preservation methods • The effects of fire suppression • Fire behaviour and spread • Fire patterns • A basic awareness of the dangers of hazardous materials 	<ul style="list-style-type: none"> • Assess fire ground and structural condition • Observe the damage from and effects of the fire • Interpret burn patterns

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>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.</p>	<p>4.2.3</p>	<ul style="list-style-type: none"> • Assess structural conditions • Observe the damage and effects of the fire • Discover the impact of fire suppression efforts on fire flow and heat propagation • Evaluate protected areas to determine the presence and/or absence of contents
<p>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.</p>	<p>4.2.4</p> <ul style="list-style-type: none"> • Fire dynamics, fire development, and the interrelationship of heat release rate, form and ignitibility of materials 	<ul style="list-style-type: none"> • Interpret the effects of burning characteristics on different types of materials

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>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.</p>	<p>4.2.5</p> <ul style="list-style-type: none"> • Fire behaviour and spread based on fire chemistry, fire dynamics, and physics • Fire suppression effects • Building construction 	<ul style="list-style-type: none"> • Interpret variations of burn 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 • Analyze and synthesize information
<p>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.</p>	<p>4.2.6</p> <ul style="list-style-type: none"> • 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 • Evidence-gathering methods and documentation 	<ul style="list-style-type: none"> • Employ search techniques that further the discovery of fire cause evidence and ignition sources • Use search techniques that incorporate documentation • Collect and preserve evidence

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>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 pre-fire location, and the area(s) or point(s) or origin is discovered.</p>	<ul style="list-style-type: none"> • The effects of fire on different types of material • The importance and uses of reconstruction 	<ul style="list-style-type: none"> • Examine all materials to determine the effects of fire • Identify and distinguish among different types of fire-damaged contents • Return materials to their original position using protected areas and fire patterns

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>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.</p>	<ul style="list-style-type: none"> • 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 capabilities • Types of failures 	<ul style="list-style-type: none"> • Determine the system's operation and its effects on the fire • Identify alterations to, and failure indicators of, building systems • Evaluate the impact of suppression efforts on building systems
<p>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.</p>	<ul style="list-style-type: none"> • Different types of explosions and their causes • Characteristics of an explosion • The difference between low- and high-order explosions 	<ul style="list-style-type: none"> • Identify explosive effects on glass, walls, foundations and other building materials • Distinguish between low- and high-order explosion effects • Analyze damage to document the blast zone and origin

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>4.3 Documenting the Scene Duties shall include diagramming the scene, photographing, and taking field notes to be used to complete a final report.</p>		
<p>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.</p>	<p>4.3.1</p> <ul style="list-style-type: none"> • Commonly used symbols and legends that clarify the diagram • Types of evidence and patterns that need to be documented • Formats for diagramming the scene 	<ul style="list-style-type: none"> • Ability to sketch the scene • Basic drafting skills • Evidence recognition and observational skills
<p>Photographically document the scene, given standard tools and equipment, so that the scene is accurately depicted and the photographs support scene findings.</p>	<p>4.3.2</p> <ul style="list-style-type: none"> • Working knowledge of high-resolution camera and flash • The types of film, media and flash available • The strengths and limitations of each 	<ul style="list-style-type: none"> • Ability to use a high-resolution camera, flash and accessories

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>Construct investigative notes, given a fire scene, available documents (e.g., pre-fire 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.</p>	<p>4.3.3</p> <ul style="list-style-type: none"> • Relationship between notes, diagrams, and photos • How to reduce scene information into concise notes • The use of notes during report writing and legal proceedings 	<ul style="list-style-type: none"> • Data-reduction skills • Note-taking skills • Observational and correlating skills

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>4.4 Evidence Collection/Preservation Duties shall include using proper physical and legal procedures to retain evidence required within the investigation.</p>		
<p>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.</p>	<p>4.4.1</p> <ul style="list-style-type: none"> • Types of evidence associated with fire victims and fatalities • Evidence preservation methods 	<ul style="list-style-type: none"> • Observational skills • The ability to apply protocols to given situations
<p>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.</p>	<p>4.4.2</p> <ul style="list-style-type: none"> • Types of evidence • Authority requirements • Impact of removing evidentiary items on civil or criminal proceedings (exclusionary or fire-cause supportive evidence) • Types of laboratory tests available • Packaging techniques and materials • Impact of evidence collection on the investigation 	<ul style="list-style-type: none"> • Ability to recognize different types of evidence and determine whether evidence is critical to the investigation

JPR's for Fire Investigator

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>Select evidence for analysis, given all information from the investigation, so that items for analysis support specific investigation needs.</p>	<p>4.4.3</p> <ul style="list-style-type: none"> • Purposes for submitting items for analysis • Types of analytical services available • Capabilities and limitations of the services performing the analysis 	<ul style="list-style-type: none"> • Evaluate the fire incident to determine forensic, engineering, or laboratory needs
<p>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.</p>	<p>4.4.4</p> <ul style="list-style-type: none"> • Rules of custody and transfer procedures • Types of evidence (e.g., physical evidence obtained at the scene, photos, and documents) • Methods of recording the chain of custody 	<ul style="list-style-type: none"> • Ability to execute the chain of custody procedures • Accurately complete necessary documents
<p>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.</p>	<p>4.4.4</p> <ul style="list-style-type: none"> • Disposal services available • Common disposal procedures and problems 	<ul style="list-style-type: none"> • Ability to execute the chain of custody procedures • Accurately complete necessary documents

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.	4.4.4	<ul style="list-style-type: none"> Disposal services available Common disposal procedures and problems 	<ul style="list-style-type: none"> Ability to execute the chain of custody procedures Accurately complete necessary documents
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JPR's for Fire Investigator

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NFPA Objective		Requisite Knowledge	Requisite Skill
4.5 Interview Duties shall include obtaining information regarding the overall fire investigation from others through verbal communications.			
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.	4.4.1	<ul style="list-style-type: none"> 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, neighbours, witnesses, suspects, and so forth) Pros and cons of interviews versus document gathering 	<ul style="list-style-type: none"> Planning skills Development of focused questions for specific individuals Evaluation of existing file data to help develop questions and fill investigative gaps
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.	4.4.2	<ul style="list-style-type: none"> Types of interviews Personal information needed for proper documentation or follow-up Documenting methods and tools Types of nonverbal communication and their meaning 	<ul style="list-style-type: none"> Adjust interviewing strategies based on deductive reasoning Interpret verbal and nonverbal communications Apply legal requirements applicable Exhibit strong listening skills

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NFPA Objective		Requisite Knowledge	Requisite Skill
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.	5.2.2	<ul style="list-style-type: none"> Types of interviews Report evaluation methods Data correlation methods 	Data correlation skills and the ability to evaluate source information (e.g., first responders and other witnesses)

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NFPA Objective	Requisite Knowledge	Requisite Skill
4.6 Post-Incident Investigation		
Duties shall include the investigation of all beyond the fire scene at the time of the origin and cause determination.		
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.	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Identify the reports and documents necessary for the investigation Implement the chain of custody Organizational skills
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.	<ul style="list-style-type: none"> File assessment and/or evaluation methods including: <ul style="list-style-type: none"> Accurate documentation practices Requisite investigative elements 	<ul style="list-style-type: none"> Information assessment Correlation Organizational skills

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NFPA Objective	Requisite Knowledge	Requisite Skill
4.6.3		
Co-ordinate 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.	<ul style="list-style-type: none"> How to assess one's own expertise Qualifications to be called for expert testimony Types of expert resources (e.g., forensic, CPA, polygraph, financial, human behavior disorders, and engineering) Methods to identify expert resources 	<ul style="list-style-type: none"> Apply expert resources to further the investigation by networking with other investigators to identify experts Questioning experts relative to their qualifications Developing a utilization plan for use of expert resources
4.6.4		
Establish evidence as to motive and/or opportunity, given an incendiary fire, so that the evidence is supported by documentary, and meets the evidentiary requirements of the jurisdiction.	<ul style="list-style-type: none"> Types of motives common to incendiary fires Methods used to discover opportunity Human behavioral patterns relative to fire-setting 	<ul style="list-style-type: none"> Financial analysis Records gathering and analysis Interviewing Interpreting fire scene information and evidence for relationship to motive and/or opportunity

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NFPA Objective	Requisite Knowledge	Requisite Skill
<p>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.</p>	<p>4.6.5</p> <ul style="list-style-type: none"> Analytical methods and procedures (e.g., hypothesis development and testing, systems analysis, time lines, link analysis, fault tree analysis, and data reduction matrixing) 	<ul style="list-style-type: none"> Analytical and assimilation skills

JPRs for Apparatus Equipped with Fire Pump**17 of 18**

NFPA Objective	Requisite Knowledge	Requisite Skill
<p>4.7 Presentations Duties shall include the presentation of findings to those individuals not involved in the actual investigation.</p>		
<p>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).</p>	<p>5.2.5</p> <ul style="list-style-type: none"> Elements of writing Typical components of a written report Types of audiences and their respective needs or requirements 	<ul style="list-style-type: none"> Writing skills Ability to analyze information Determine the reader's needs or requirements

JPR's for Fire Investigator**18 of 18**

NFPA Objective	Requisite Knowledge	Requisite Skill
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.	<ul style="list-style-type: none"> Types of investigative findings The informational needs of various types of audiences The impact of releasing information 	<ul style="list-style-type: none"> Communication skills Ability to determine audience needs Correlate findings
Testify during legal proceedings, given investigative findings, contents of reports, and consultation with legal counsel, so that all pertinent investigative information and evidence is presented clearly and accurately and the investigator's demeanor and attire are appropriate to the proceedings.	<ul style="list-style-type: none"> Types of investigative findings Types of legal proceedings Professional demeanor requirements Understanding due process and legal proceedings 	<ul style="list-style-type: none"> Communication and listening skills Ability to differentiate facts from opinion Determine accepted procedures, practices, and etiquette during legal proceedings

JPR's for Fire Investigator**1 of 4**

NFPA Objective	Requisite Knowledge	Requisite Skill
Conduct public informational presentations, given relative data, so that information is accurate, appropriate to the audience, and clearly supports the information needs of the audience.	<ul style="list-style-type: none"> Types of data available regarding the fire loss problem and the issues about which the community must know 	<ul style="list-style-type: none"> Ability to assemble, organize and present information

Application Form: NFPA 1033- Professional Qualifications for Fire Investigator

Refer to Appendix G of the Evaluation and Certification Guide before completing this form. The Evaluation and Certification Guide is available on our website.

Contact Information:

Name: _____
 (First Name) (Initial/Middle Name) (Surname)

Home Address: _____
 (Address) (City/Town) (Postal Code)

Phone Number: _____
 (Home Phone) (Work Phone) (Mobile Phone)

Email Address: _____ Date of Birth: _____
 (MM-DD-YYYY)

Employment/Membership:

_____ Name of Chief/Supervisor
 Emergency Services Organization

Certification Level & Prerequisites:

Prerequisites must be completed before making Application

Fire Investigator The following prerequisites must be completed to be eligible for certification at this Level:

- I am a member in good standing of a Fire Department or other eligible emergency service
- I have completed the Job Performance Requirements listed in Appendix G of the Evaluation and Certification Guide
- I am Certified at Level 2 in NFPA 1001 Fire Fighting Professional Qualifications

IFSAC Certificate Number _____ *Include a photocopy of your Certificate with this application*

- I do not have a Level 2 NFPA 1001 Certificate – I wish to apply based on alternate training and experience

Note: Alternative training and experience may be accepted at the discretion of Saskatchewan Public Safety Agency in place of a Level 2 Certificate in *NFPA 1001 Fire Fighting Professional Qualifications*. See Appendix G.

Declaration

Practical evaluations for Certification may be physically strenuous and potentially hazardous. Your signature below indicates that you understand the demands that will be placed on you during testing – and – that you are physically capable of taking part in all practical evaluation sessions required for the Level you have selected above.

Signature: _____ Date: _____

Complete and return this form to:

Saskatchewan Public Safety Agency,
Suite 500 - 1855 Victoria Avenue, Regina, SK, S4P 3T2
Fax: (306) 787-7107