

## P3 Fire Investigation and Reporting (NCI 56)

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### **Purpose**

This document provides for:

- safe and effective fire investigation and reporting.

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## Requirements for fire investigation

### **Executive Officers' responsibilities**

All fire incidents attended by the NZFS are required to be investigated to establish cause.

Fire Region Managers are responsible for:

- having Specialist Fire Investigators available to investigate fires anywhere within their Fire Region.
- the co-ordination of inter-region specialist investigation teams where appropriate.

Area Managers are responsible for ensuring that operational officers within their districts are trained in fire investigation.

The National Commander is responsible for ensuring the fire investigation and subsequent reporting is completed. The function of completing and submitting the fire investigation report is delegated to the person appointed to carry out the investigation.

The senior most ranking officer from the district in which any incident occurs is responsible for ensuring the SMS report is completed. This function is usually delegated to the first arriving officer.

### **Technical reference**

The NZFS's main reference for fire investigation is:

- *NFPA 921 Guide to Fire and Explosion Investigations*

This reference will:

- provide the model of scientific method by which fire investigations will be systematically undertaken
- be consulted for guidance on the interpretation of evidence
- form the basis of fire investigation training and assessment.

### **Definitions**

For the purposes of this instruction the following definitions apply:

Term	Meaning
<b>Specialist Fire Investigator</b>	any NZFS member assigned by the Fire Region Manager, to assist the region's OIC Fire's with the identification of the origin and cause of fires. Such officers will typically: <ul style="list-style-type: none"> <li>• possess extensive experience in firefighting or fire safety, AND</li> <li>• have received specialised training and assessment in fire investigation techniques.</li> </ul>
<b>cause</b>	the means by which a possible fuel source is brought into contact with a possible ignition source (or vice versa) to start fire
<b>circumstances</b>	the setting; including the actions or inaction of people before, during and after the ignition of a fire, allowing it to start or spread, or otherwise contributed to the outcome

<b>deliberately lit - lawful</b>	a fire that was ignited intentionally for lawful purposes, including authorised open burning of agricultural or silvicultural purposes, rubbish disposal, cooking or heating, and allowed bonfires
<b>deliberately lit - unlawful</b>	<p>a fire that was ignited intentionally, under circumstances where the fire should not have been ignited, and one or more indicators as listed in section 19.2 of <i>NFPA 921:2008 Guide to Fire and Explosion Investigations</i> have been observed.</p> <p>These fires may be reported as “incendiary”.</p> <p>No judgement is required to be made as to whether or not the elements of the offence of arson or otherwise have been established.</p>
<b>point of origin</b>	the exact physical location where a heat source and a fuel come in contact with each other and a fire begins.
<b>indicated cause</b>	a professional opinion relating to the cause of a fire, based on factual analysis, physical evidence, experience and training.
<b>suspicious</b>	<p>an unlawfully deliberately lit fire where, given the known information and based on the balance of probabilities, the investigator considers that the fire was a result of malicious or wilful intent, or wanton disregard for others and property, to cause unlawful damage.</p> <p>No judgement is required to be made as to whether or not the elements of the offence of arson or otherwise have been established.</p>
<b>undetermined</b>	<p>the supposed cause of a fire cannot be proven to an acceptable level of certainty e.g.</p> <p>a) more than one probable accidental or natural cause exists and cannot be eliminated, AND</p> <p>b) no indications exist that the fire resulted from a deliberate act.</p> <p>This does not exclude the possibility that the fire was intentionally set, but indicates that the investigator found no indications as such.</p>

### ***Fire investigating assistance***

If the origin and cause cannot be readily established by the attending officers, it is important to call for a Specialist Fire Investigator to assist at the earliest opportunity.

Specialist Fire Investigators will be called to attend and investigate the following fires:

- fires where fatalities occur
- fires where serious, (life threatening), fire related injury has occurred
- structure fires where the cause is suspicious or cannot be determined
- significant fire spread across a property boundary
- fires in buildings where built-in fire safety features have failed, or not performed to known or expected standards
- structure fires of 3rd alarm equivalent or greater, that may have a significant regional and/or national consequence

## **Process for requesting a Specialist Fire Investigator**

The OIC Fire:

- ensures a Preliminary Fire Investigation Form is completed (available at <http://firenet.fire.org.nz/Post-incident-tasks/Pages/default.aspx> ).

Scene facts and witness contact details recorded on the Preliminary Fire Investigation form will assist the Specialist Fire Investigator in their investigation.

The OIC either:

- hands the completed form to the Specialist Fire Investigator on their arrival OR
- leaves it at an agreed location (e.g. nearest fire station) if attending after fire crews have left the scene (refer to *Preservation of Evidence section*).

The Specialist Fire Investigator, on receiving a request to attend a fire scene:

- contacts the OIC by phone prior to responding to establish the reason and urgency for response, when practicable
- decides whether to attend immediately or the following day, considering:
  - time of day
  - travelling distances
- requests further assistance if a broader range of knowledge or further resources are required.

## **Police notification and involvement**

Police will be notified when:

- a fire cause is considered suspicious
- fatalities or serious (life threatening) injuries occur.

Police attending incidents with ongoing firefighting operations are to liaise with the Operations Manager or OIC Fire.

Transfer of lead agency to Police will only occur after the danger of fire, structural collapse, exposure to dangerous products of combustion or other fire-related hazards have been identified and eliminated, isolated, or minimised.

Once overall control of an incident is transferred to Police, NZFS officers, including Specialist Fire Investigators, will come under the command of the OIC Fire.

## Gas or electrical related fire cause

### Informing occupants

The OIC Fire will inform the property occupants that the area of origin and/or equipment involved should be safeguarded and not repaired or discarded until it is confirmed that it is not required for any follow up investigation by any government agency expert or authority as required by:

- Electricity Act 1992
- Gas Act 1992
- Health and Safety in Employment Act 1992.

### Notifying authorities

Where an electrical or gas fault is believed to have contributed to the cause of a fire, the OIC Fire will make the following notifications:

If the incident is a	then the notification goes to
place of work or where a worker is involved,	Department of Labour (DOL)
public place or non-work environment (such as a private home),	Energy Safety (ES)

If this incident does also involve any of the following triggers:

- fatalities
- serious harm (requires medical attention)
- significant property damage (can no longer be used for intended purpose)

the OIC Fire is to notify ComCen, providing the following information:

- brief reason why the notification is being made
- whether it is work related (DOL), or public place or non-work (ES)
- contact number for the OIC Fire

the ComCen is to notify DOL (work related) or ES (public place or non-work), providing:

- brief reason why the notification is being made
- contact number for the OIC Fire

The on-call agency representative will ring the OIC Fire directly to discuss the next course of action.

If this incident does not also involve any of the above triggers, on return to station the OIC Fire will:

- report the incident including the incident details and appliance involved (make/model/serial number etc) to:
  - Energy Safety using the Event Notification Form on their web site [www.energysafety.govt.nz](http://www.energysafety.govt.nz)
  - Dept of Labour (0800 209020 extn 1).

## **Preservation of evidence**

Whenever required, the area of origin and/or equipment involved will be safeguarded and not repaired or discarded, until it is confirmed that it is not required for any follow up investigation by any government agency expert or authority. If necessary a Police scene-guard may be established to maintain security.

The collection and removal of material from fire scenes will only be done by Police or other agencies with authority to remove evidence. The preservation, analysis and subsequent disposition of all such material is the responsibility of Police.

## **Fire prevention exhibits**

Where an article has a value as an exhibit for use in the promotion of fire safety, and the item is not subject to the "preservation of evidence" rule above, permission from the owner of the article will be obtained before the item is removed from the scene. This permission will be in writing and NZ personnel will declare (in writing) what the intended use of the article is.

## **Vegetation fires**

It is not the responsibility of the NZFS to investigate the cause of vegetation fires outside urban fire districts. Fire Region Managers may make Specialist Fire Investigators available to assist Rural Fire Authorities if requested.

Vegetation fires come with high environmental, cultural and economic costs. To assist fire authorities with the task of determining cause and cost recovery, the OIC Fire will ensure that all practicable actions are taken to preserve the integrity of the area of origin.

## **Reporting**

Anytime the fire cause may be considered suspicious, a K12 message should be sent, as described in *M3-2 Land Mobile radio communications* (K12 is for information gathering purposes only; if a supporting agency response is required, K11 must be used as well).

Inside an urban fire district the responsibility for investigating and reporting fire cause rests with the Area Manager, the function is delegated to the OIC Fire.

Outside an urban fire district, the responsibility for investigating and reporting fire cause rests with the Principal Fire Officer. If they, or their representative, are not in attendance at the incident, the attendant NZFS officer will complete all reporting requirements on their behalf.

The type of fire investigation report depends on the scope, severity, and complexity of the incident. It may be:

- SMS report with additional comments, OR
- SMS report and a full investigation report, OR
- as directed.

Full investigation reports are additional to the SMS incident reports.

A Serious or Unusual Incident Report may also be required in certain circumstances, as specified in the section below.

### *SMS incident report*

The function of completing and filing the SMS incident report is delegated to the first arriving officer. Under normal circumstances the SMS incident report will be completed within 14 days from the date of the incident.

If Specialist Fire Investigators carry out an investigation, the SMS incident report will be reviewed by them before the incident report can be closed.

The Specialist Fire Investigator will verify the information relating to the origin and cause and the circumstances as detailed in the incident report. Using the facility provided in SMS, they will then:

- note observations and details of the investigation by adding comments to the incident report, OR
- attach a full investigation report.

### *Full investigation reports*

Specialist Fire Investigators will complete a full investigation report for every incident involving:

- a fire related death
- serious (life-threatening) fire related injury
- the failure of fire protection systems or fire safety features to contain or control a fire
- fire spread from one building to another
- structure fires where cause is:
  - believed to be of a suspicious nature, OR
  - known to be arson
- more information than is recorded in a SMS report.

As a minimum, a full investigation report will include the information within the fields of the national fire report template, available by going to:

Microsoft Word>office button>new>my templates>reports tab

This report template is modular and can be sized to suit the event.

NZFS Post Incident Observations and Findings will be in an appendix to the report.

Following peer review (see below), the OIC Fire and Fire Region Manager (or delegated officer) will review the completed investigation report.

All information gained by the Specialist Fire Investigator relating to a fire (including notes, photos, audio files etc) will be stored electronically in the national repository on "N" drive irrespective whether a full fire report is completed.

### ***Post Incident Analysis Reports***

The Fire Service Act 1975 obligates the NZFS to learn from fire events, distribute that learning and advocate to the government, the building industry and the wider community for improved fire safety practices. In addition to gaining an understanding about what causes fire, it is also important to capture knowledge about the performance of building design, the effectiveness of fire suppression and detection systems and human behaviour at fire incidents. This is achieved through Post Incident Analysis (PIA).

PIA occurs in its simplest form when issues such as the performance of smoke detection or sprinklers are recorded through the SMS incident reporting system. More advanced fire related

learning can be reported by Specialist Fire Investigators using the "observations and findings" appendix in the national template of the full fire investigation report. Detailed PIA may require the skills and experience of a qualified fire engineer to complete a dedicated PIA report.

### **The PIA process**

The SMS incident report or full fire investigation report should be used to capture PIA information appropriate to the level of report and investigator.

Where any of the following criteria are met, the specialist fire investigator is to contact the ComCen and request the on-call fire engineer is paged to contact them.

- Fire in large crowd occupancy (>100 people)
- Fire in sleeping accommodation - non-residential
- Fire spread across boundary or fire compartment
- Failure of occupants to escape/ rescue required
- Inadequate fire-fighting water supply
- Failure of fire safety system
- Anytime where a PIA will be of significant benefit in capturing relevant information

The on-call fire engineer will contact the specialist fire investigator, discuss the incident and decide whether the potential learning can be captured by the specialist fire investigator or if a dedicated PIA is warranted requiring a fire engineer to respond. If the fire engineer considers a dedicated PIA is warranted, he/she will contact the fire engineering unit team leader closest to the incident to authorise a response.

The fire engineering unit team leader will either;

- decline and refer it back to the specialist fire investigator to include in their report or,
- approve the request and issue the terms of reference for the PIA. The team leader is responsible for :
- allocating fire engineering resources to attend and complete the PIA
- notifying the respective regional management and manager fire engineering that the PIA has been authorised.

Note:

- contacting the on-call fire engineer does not generate an automatic response of a fire engineer to an incident.



### *Report deadlines*

All full investigation reports will be completed within one month from the date of the incident. If any external reports, such as Coroners reports, specialist analyses etc are not available at this time, this is to be noted and the report filed. The external information will be attached when it becomes available at a later stage.

SMS reports and additional commentary to the SMS report will be completed within 14 days from the date of the incident.

Post Incident Analysis reports will be completed within two months from the date of the incident.

### *Review of investigation reports*

All reports are to be subject of a peer review process to verify clarity and completeness. The Legal Advisor may be used to review reports where fatalities have been involved and/or where criminal prosecution proceedings are probable.

### **Serious or unusual incident report**

The National Commander requires early notification of incidents that may result in:

- media attention
- changes of legislation
- NZFS operations being questioned.

A Serious and Unusual Incident Report is to be forwarded to the National Commander, through the Director of Operational Support and Training, within three working days of the incident on the form available at:

Word>office button>new>my templates>reports tab.

For any incident that has been identified as 'Serious or Unusual', the Fire Region Manager will notify the National Commander as soon as initial details are available.

### **Release of information**

The OIC Fire or Specialist Fire Investigator may make public comment regarding the incident. Such comment will be in accordance with the provisions of *POLCM1.1 Media*.

No person whatsoever may release any detail relating to the cause of death of any fire victim until after the coroner has announced their official finding.

Where legal proceedings have been initiated, public comment regarding fire cause will only be made in conjunction with NZFS legal advice.

When a copy of a fire investigation report is requested, the provisions of:

- *POLCM2.2 Official Information/Privacy*
- *POLLC1.6 Official Information Act 1982*
- *POLLC1.7 (Privacy Act 1993*

will be strictly adhered to.

### **Record of amendments**

Date	Brief description of amendment
May 2012	Section on PIA reports added, including reference in reporting deadlines. Form links checked and updated