



Australian Government

PUAFIR506 Conduct complex prescribed burns

Release: 2

PUAFIR506 Conduct complex prescribed burns

Modification History

Release 2.0 This is the second release of this unit of competency in the PUA Public Safety Training Package.

Editorial update.

Release 1.0 This is the first release of this unit of competency in the PUA Public Safety Training Package.

Application

This unit of competency involves the skills and knowledge required to prepare and conduct complex prescribed burns, in accordance with approved burn plans.

A prescribed burn is the controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity and rate of spread required to attain planned resource management objectives. An approved prescribed burn plan includes a map identifying the area to be burned and incorporates the specifications and conditions under which the operation is to be conducted.

Complex prescribed burns are characterised by moderate to high risk, a range of fire intensity, being in medium to large areas, having significant potential impact on assets and involving a variety of fuels and terrain. A burn operation may involve a large number of resources requiring the establishment of a formal management and support structure. A prescribed burn may require several separate ignitions (ground and/or aerial) possibly over several days. It may have several high value assets requiring complex protection actions.

The unit applies to personnel responsible for preparing, conducting and evaluating complex prescribed burns on public and private land.

The fire sector is those sections of government departments, statutory authorities or organisations that have responsibility under jurisdictional arrangements for the delivery of firefighting and fire management services.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

It is essential that the prerequisite units listed below are obtained prior to the issuance of this unit to individuals within the fire sector or the units contributing to the attainment of a fire qualification.

PUAFIR303 Suppress wildfire

Competency Field

Fire

Unit Sector

Fire

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to burn

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** Complex prescribed burn operations are identified and undertaken, in accordance with approved prescribed burn plan, burn objectives, organisational procedures, and legislative and regulatory requirements
- 1.2** Permits are obtained, in accordance with organisational procedures and legislative and regulatory requirements
- 1.3** Burn notifications and plans are issued to personnel or organisations, in accordance with prescribed burn plan, organisational procedures and legislative requirements
- 1.4** Control lines, including secondary control lines are specified and prepared, in accordance with organisational procedures
- 1.5** Prescribed burn plan, operational hazards and risks to safety of people, property, assets, ecology and environment are identified and risk mitigation works completed
- 1.6** Forecast weather conditions are monitored, recorded and assessed, in accordance with organisational procedures
- 1.7** Fuel conditions are monitored, in accordance with organisational procedures
- 1.8** Resource requirements are confirmed with reference to burn plan and anticipated conditions
- 1.9** Forecast weather conditions are monitored throughout prescribed complex burn

2 Conduct burn

- 2.1** Burn notifications are issued, in accordance with organisational procedures
- 2.2** Pre-burn checks are conducted, in accordance with organisational procedures
- 2.3** Local weather conditions for day of burn are monitored and contingency arrangements actioned and communicated accordingly
- 2.4** Resources are gathered and personnel briefed, in accordance with prescribed burn plan and contingency arrangements
- 2.5** Burn ignition strategies and tactics are implemented, in accordance with prescribed burn plan and organisational procedures including lighting techniques for ground and/or aerial ignition, as relevant to the specific burn, lighting patterns and lighting sequence
- 2.6** Burning is monitored, patrol activities are conducted and operational changes made, as required
- 2.7** Contingencies are implemented, as required, in accordance with prescribed burn plan
- 2.8** Burn documentation is kept, in accordance with organisational procedures
- 2.9** Burn operations are concluded and burn security is implemented in accordance with organisational requirements
- 2.10** Crews are debriefed and resources released from the burn
- 2.11** Incidents are reported and investigated in accordance with organisational procedures

3 Conduct post burn activities

- 3.1** Outcomes of burn are assessed and reported against burn objectives, in accordance with organisational procedures
- 3.2** Variations from burn plan are reported, in accordance with organisational procedures
- 3.3** Restoration and rehabilitation works are identified and carried out, in accordance with organisational procedures
- 3.4** Complex prescribed burn records are submitted, in

accordance with organisational procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

prescribed burn plan must include	• an approved plan for conduct of prescribed burning • map identifying the area to be burned • specifications and conditions under which operation is to be conducted
burn objectives must include one or more of the following	• asset protection • biodiversity protection • community protection • habitat management • hazard reduction • management of cultural sites and activities • protection of fire sensitive ecological communities • vegetation management
operational hazards must include one or more of the following	• adverse terrain or weather conditions • crew size • falling trees and limbs • hazardous materials • ignition methods • plant • road traffic • vegetation
environmental and ecological risks must include three or more of the following	• impact of smoke • impact of use of any chemical fire suppressants • impact on native flora and fauna, including rare and endangered species • impact on soil • impact on water quality or supply

contingency arrangements must include

- actions to take in the event of unexpected weather
- command structure
- dealing with escapes
- resource breakdowns
- resource requirements
- safety considerations including escape routes and safety zones
- special resources and/or secondary control lines
- wind changes

personnel or organisations must include one or more of the following

- personnel or organisations who
 - have an interest in managing the consequences of a burn
 - have an interest in preventing health impacts from smoke e.g. nursing homes, health departments
 - have an interest in specific assets
 - have an interest in the area to be burned
 - may be adversely affected by the burn
 - may be concerned by evidence of a burn
 - may have adjacent land to which a burn could spread

resource requirements must include one or more of the following

- contingency resources
- crews for
 - aircraft ground support
 - control and suppression
 - ground ignition
- equipment and supplies
- logistical support
- tankers and other vehicles

burn ignition strategies and tactics must include:

- contingency arrangements
- fire behaviour to be achieved
- ignition methods, lighting patterns, sequencing and timing of ignition

lighting techniques for ground and aerial ignition must include three or more of the following

- hand held drip torch
- aerial drip torch
- aerial incendiaries
- hand held propelled incendiaries
- vehicle mounted propelled incendiaries
- vehicle mounted incendiaries
- wind and/or waterproof matches

lighting patterns must include two or more of the following	• backing fire ignition • spot or grid ignition • strip ignition • flank fire ignition
lighting sequence must include	• fuel arrangement • fuel moisture • slope • time of day • wind direction
monitoring complex prescribed burn must include four or more of the following	• fire development, shape and spread • flame height • fuel moisture content • predictions • rate of spread • safety considerations • smoke development • weather observations
conclusion and complex prescribed burn security activities must include	• mitigating hazards for public safety • mopping up and blacking out • patrolling burn area • reopening roads • transfer of responsibility procedures
outcomes of the complex prescribed burn must include two or more of the following	• achievement of burn objectives • escapes • external impacts • levels of scorch • percentage of area burnt • reporting and storage of burn documentation
safety of people must include	• all those involved with burn implementation • any in areas adjacent to burn area • any permanently or temporarily in burn area • impact of smoke on vulnerable communities near burn area

Unit Mapping Information

This unit replaces and is equivalent to PUAFIR511 Conduct complex prescribed burns.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=3eca5672-6d5a-410b-8942-810d0ba05bbf>

Assessment Requirements for PUAFIR506 Conduct complex prescribed burns

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions on at least one occasion and includes

- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) organisational requirements including risk mitigation and safe work practices
- concluding burn operations and implementing burn security
- conducting operational briefings and debriefings
- conducting post burn activities
- conducting safe complex prescribed burn operations by utilising appropriate resources (ground and air)
- confirming location, construction and suitability of control lines for prescribed burns
- confirming resources required
- evaluating outcomes against objectives
- identifying and protecting assets
- implementing contingency arrangements
- interpreting and implementing complex prescribed burn plans
- interpreting existing and forecast weather conditions and fire behaviour conditions
- issuing verbal and written burn notifications
- monitoring burn and patrol activities
- preparing to burn
- recording actions taken
- responding to changing conditions
- restoring and rehabilitating sites
- using fire prediction tools
- using monitoring equipment
- utilising lighting techniques and sequencing
- working with ignition patterns and techniques

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions and includes knowledge of

- characteristics of complex prescribed burns including involvement of a variety of fuels and terrain, medium to large areas, moderate to high risk, range of fire intensity and significant potential impact on assets
- contingency plans
- evaluation of burn outcomes against objectives
- fire prediction tools and their use
- fuel sampling techniques
- ground and aerial ignition patterns and techniques
- impact of conditions of a complex prescribed burn on potential fire behaviour
- legislation, industry standards, codes of practice and regulations
- legislative, regulatory and organisational authorisations
- organisational documentation, policies and procedures
- permit requirements
- procedures for monitoring, concluding and securing burn
- resource requirements and capabilities
- restoration and rehabilitation activities including site stabilisation and recording and reporting future restoration and rehabilitation requirement
- seasonal restrictions on prescribed complex burns
- smoke modelling and smoke impacts
- techniques, patterns and sequencing for lighting
- traffic management plans
- types of prescribed complex burns
- types of property and assets within or near burn area including urban areas, commercial land use such as crops or industry, any cultural sites or historical buildings, other property and assets, stock, utilities such as power and telephone lines, water supply, structures and communications towers, camps or recreational areas, plantations and research plots and reference areas
- verbal and written burn notifications
- weather conditions including temperature, relative humidity, wind, atmospheric stability, drought index, fire danger index, weather forecasts and actual or anticipated changes in conditions
- weather monitoring techniques
- Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) organisational requirements including risk mitigation and safe work practices

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training

Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in operational situations or in simulated operational training situations that reflect workplace conditions. Competency should be demonstrated in an operational environment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, equipment, tools and personal protective clothing and equipment currently used in industry including
 - an area for proposed complex prescribed burn
 - authorisation to light burn
 - fire management plans
 - lighting and suppression crews
 - lighting equipment
 - prescribed burn plans including plan for proposed assessment burn
 - suppression equipment
- applicable documentation including organisational procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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