

JOINT SOP	
Title	Tree Hazard – Fire
Version	v6.0
Purpose	To mitigate the risk to emergency service personnel of injury or death from falling trees and branches during bushfire response and planned burning operations.
Scope	This Joint Standard Operating Procedure (JSOP) applies to all emergency services personnel (including emergency service agencies and contractors) involved with bushfire response and planned burning operations. Specifically, in relation to the identification of tree hazard in the forested/treed environment and mitigating the risk of consequent injury, or damage to equipment while accessing or being on the fire ground. While the focus of this JSOP is the management of tree hazards for fire, concepts of this procedure, can be applied to other emergencies when appropriate.
Applicable Agencies	<p>The following agencies will apply this JSOP due to legislative responsibilities or agency role defined within the State Emergency Management Plan:</p> <ul style="list-style-type: none"> • CFA • DEECA (FFMVic) • FRV • VICSES <p>Other agencies may apply this doctrine as applicable.</p>
Content	<p>The procedural contents of this JSOP are:</p> <ul style="list-style-type: none"> • Step 1: Identify the potential existence of tree hazard during bushfire response or planned burning • Step 2: Mitigate the risk arising from tree hazard during travel to and from bushfire incidents and planned burning • Step 3: Mitigate the risk arising from tree hazard on the fire ground. • Step 4: Mitigate the risk of unidentified hazard trees on the fire ground. • Step 5: Reassessment • Step 6: Complete operations. • Schedule 1: Qualifications and Endorsement for Hazard Tree Assessment • Schedule 2: Hazard Tree Marking System • Schedule 3: Hazard Tree Treatment Options

	<ul style="list-style-type: none"> • Schedule 4: Tree Hazard Mitigation Matrix: Identification, Assessment, Marking and Treatment
<p>Responsibilities</p>	<p>All emergency service personnel involved in bushfire response and planned burning, including Incident Controllers, Operations Officers, Sector Commanders, Crew Leaders, crew members, contractors and all others entering a fire ground are responsible for following this procedure.</p> <p>Where bushfire roles are referred to, these should also read as the equivalent planned burn role.</p> <p>Specifically:</p> <ol style="list-style-type: none"> 1. Incident Controllers are to ensure tree hazard is considered along the route(s) used to enter/leave the fire ground. 2. Incident Controllers are to ensure that known areas of high tree hazard are considered during the development of strategies and tactics in the Incident Action Plan, and in relation to deployment orders and safety messaging. 3. Incident Controllers are to ensure that crews are briefed at shift commencement on known areas of high tree hazard. 4. Incident Controllers are to ensure that mop-up/blacking out or patrol does not commence until a hazard tree assessment has been completed for that portion of the fire control line or mitigation controls are in place. 5. Incident Controllers are to ensure Clear and Present Danger trees that remain standing on the fire ground after the passage of the fire are treated within the Timeframe of Current Operations.
<p>Definitions</p>	<p>Common Emergency Management terms and definitions can be found in EM-COP under Library > Definitions.</p> <p>Within this document, the following definitions apply:</p> <p>Assess (tree hazard) To locate and evaluate the extent of tree hazard and to determine an appropriate risk control measure by qualified or endorsed personnel.</p> <p>Backburning The intentional application of fire along the inner edge of a fire control line to consume fuels in the path of a bushfire. A backburn is used to create a burnt area that expands the depth of the fire control line.</p>

Bushfire

Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.

Clear and Present Danger Tree (CPD Tree)/Cross Tree

A tree, limb or branch that is expected to fall within the expected timeframe of the current operations and impact personnel in its potential impact zone.

Dispatching Officer

The agency or other authorised person deploying attack crews and/or support units to respond to a fire, or from one place to another.

Falling Objects Protection Systems (FOPS)

Provide protection for a vehicle’s occupants using an engineered reinforcement installed onto a vehicle roof or ceiling structure to reduce possible injuries in the case of a falling object.

Going Fire

Any bushfire that is expanding and that has not yet been contained by suppression actions.

Hangers (widow makers)

Limbs which are hooked up or tangled in other limbs and can be dislodged by external factors (e.g. wind, the effects of machinery, other trees, fire) during an operation.

Hazard Trees

The collective term for Hazardous trees, potential CPD trees and CPD Trees.

Hazardous Tree

A tree, limb or branch which, in its current state, may in part or wholly fall and impact personnel in its potential impact zone (but not considered likely to do so during the expected timeframe of the current operation).

Identify (tree hazard)

The ability to recognise stands of, or individual trees that present an increased risk to personnel.

Indicator Trees

A tree that is marked to indicate the presence and direction of a nearby Hazard Tree. An indicator tree may be used when the symbol on the hazard tree is obscured by surrounding vegetation, difficult to see from control line, or unsafe to mark.

Initial Attack

The first response/suppression work on a fire.

Mop up/Blacking Out

The process of treating, extinguishing or removing burning material along or near the fire control line, felling Hazard Trees, and preventing materials from rolling across the fire

control line in order to make the fire safe.

Planned Burning

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. It is undertaken in specified environmental conditions. Also referred to as hazard reduction burning; controlled burning; prescription fire; fuel reduction burning; planned fire and prescription burning

Potential Clear and Present Danger Tree – Protection Assured/Circle Tree

A tree which in its current state is not a CPD Tree but may become a CPD Tree if it catches alight or is impacted by wind or other disturbance. The tree has a high probability of surviving the current operation intact, based on the proposed protection measures and likely response resources available.

Potential Clear and Present Danger Tree – Protection Not Assured/Slash Tree

A tree which in its current state is not a CPD Tree but may become a CPD Tree if it catches alight or is impacted by wind or other disturbance. It does not have a high probability of surviving the current operation intact, based on the proposed protection measures and likely response resources available.

Qualification / Endorsement / Agency Fire Accreditation

A single agency process demonstrating approval by senior personnel. Refers to recognition by an approved agency representative of a candidate’s capability to meet the requirements of a specified role

Tree Hazard(s)

A general term which refers to trees, limbs or branches with potential to fall during the current operation. This includes trees with potential to become hazardous through exposure to fire during planned burning and backburning operations. Tree hazard is a term that may refer to the presence of a specific tree hazard associated with an individual tree, a set of tree hazards in an area or to large areas of tree hazard at the landscape scale.

Tree Faller

Personnel meeting the requirements of the relevant national units of competency, currently FWPCOT3351 Fall Trees Manually (advanced) or FWPCOT3350 Fall Trees Manually (intermediate) or have been awarded the Departmental Fire Accreditation of Intermediate or Advanced Faller. Any Faller may fall a tree provided it is in the scope of their accreditation.

Timeframe of Current Operations

The period when personnel are conducting operations in a work area, when an IMT is operating and before transition to recovery. During bushfire operations includes first attack

situations. This period is also during planned burned operations or when in transit to another work area.

PROCEDURE

1. Step 1: Identify the potential existence of tree hazard during bushfire response or planned burning.
 - 1.1 Local Mutual Aid Plans (LMAPs) are to contain, where relevant, map(s) indicating geographic areas with known and/or predicted high concentrations of tree hazard (e.g. tree species, fire history including fire intensity overlays, stand history and health including disease, wind/snow damage and/or silvicultural treatments) overlaid with the fire access roads and tracks.
 - 1.2 LMAPs are also to contain details and/or maps of those fire access routes on which tree hazard has been assessed and treated.
2. Step 2: Mitigate the risk arising from tree hazard during travel to and from bushfire incidents and planned burning.
 - 2.1 Where the preferred access route to a fire ground is through known and/or predicted areas of high tree hazard which have not had tree hazard assessment and treatment, resources may only be deployed via this route if the risk factors are considered acceptable under the current conditions; e.g. relevant weather factors such as wind speed (refer Schedule 3). Once deployed, personnel need to maintain awareness of hazards trees while commuting through or working in these areas and any identified unacceptable risks mitigated.
 - 2.2 Where personnel consider the risk of injury from tree hazard significant, the Incident Controller needs to be advised and an acceptable lower risk alternative implemented.
 - 2.3 LMAPs and agency fuel management doctrine are to include arrangements for deploying the appropriate resources for the assessment and treatment of hazard trees (including heavy plant/machinery with appropriate safety guarding and appropriately qualified chainsaw and plant operators).
 - 2.4 Incident Action Plans are to clearly identify areas where access is restricted in response to the risk arising from tree hazard.
3. Step 3: Mitigate the risk arising from tree hazard on the fire ground.
 - 3.1 General Principles:
 - 3.1.1 Awareness and identification of trees which present a hazard must form part of the ongoing dynamic risk assessment that is performed by all personnel on the fire ground at all times.

Refer to the Tree Hazard Pictorial Guide for illustrations and more information on tree hazard identification.
 - 3.1.2 As outlined in the State Emergency Management Priorities, ensuring the safety of emergency services personnel and the broader community from hazard trees during fires (including planned burns) will take priority over other considerations. When in doubt or dispute over either the risk associated with a tree or its values, the decision will favour safety.

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- 3.1.3 Where alternative effective fire control options are available, relocate control lines and temporary access roads and tracks away from known tree hazard areas and/or establish exclusion zones.
- 3.1.4 Where a fire has impacted or otherwise damaged trees, access/control lines and other work areas in or near the impacted area, hazard trees will be assessed, marked and treated. Refer to Schedule 3 for details on assessment areas and treatment options.
- 3.1.5 Crew Leaders/Sector/Division Commanders are to ensure appropriately qualified or endorsed personnel assess, mark and treat hazard trees on the fire ground (including staging/briefing/assembly points), where practicable. Refer to Schedule 1 for a description of qualified and endorsed personnel

3.2 Pre-fire (preparing for planned application of fire)

- 3.2.1 Assess area of operations for the presence of Potential CPD Trees (Slash Trees and Circle Trees). Where protection from fire cannot be reasonably ensured, apply hazard tree treatment options as per Schedule 3.

3.3 Initial attack/going fire

- 3.3.1 Awareness and identification of Hazard Trees must form part of the ongoing dynamic risk assessment performed by all personnel on the fire ground at all times.
- 3.3.2 During initial attack on a going fire (i.e. prior to mop-up/blacking out), personnel need to be particularly vigilant regarding identification of hazard trees and treat any identified unacceptable risks.
- 3.3.3 Any CPD Trees (Cross Trees) that are identified are to be marked and exclusion zones are to be established in accordance with this procedure.
- 3.3.4 Where personnel consider the risk of injury from tree hazard is unacceptable, the Incident Controller needs to be advised and alternative lower risk options considered. This consideration will balance the priorities placed on responder safety and any community members known to require assistance. The Incident Controller may consider utilising additional resources for rapid intervention to secure planned work and traffic areas, prior to assessment, if it is safe to do so.

3.4 Following the passage of fire

- 3.4.1 As soon as practicable after the passage of fire, Hazard Trees within striking distance of access routes, control lines or work areas should be identified and excluded and referred to qualified or endorsed personnel for assessment. Refer to Schedule 3 for details on assessment areas and treatment options. In exceptional circumstances where this requirement is impracticable, the Incident Controller must approve and record alternative actions such as utilising resources to conduct rapid intervention where it is safe to do so.
- 3.4.2 Assessment should occur at an appropriate time frame after an area has been impacted by an event to enable an effective assessment.
- 3.4.3 Before the commencement of any mop-up/blacking out/patrol of areas where fire has affected trees, hazard trees within striking distance of access/control lines and work areas will be assessed, marked and treated

(including possible isolation). Refer to Schedule 3 for details on assessment areas and treatment options. In exceptional circumstances where this requirement is impracticable, the Incident Controller must approve and record alternative actions

3.5 Mark hazard trees on the fire ground and communicate hazards.

- 3.5.1 The agreed marking system for hazard trees will be used at all times to ensure consistency and protect responder safety. Refer to Schedule 2 for details of the hazard tree marking system.
- 3.5.2 The location of identified CPD Trees that pose an ongoing danger to operational personnel is to be recorded and communicated to relevant fire ground personnel.
- 3.5.3 Where exclusion zones are established for CPD Trees that close roads being used at the incident, this should also be communicated to relevant fire ground personnel as soon as possible. Treatment of CPD Trees that close roads required for operational purposes should be prioritised where possible to minimise operational delays.
- 3.5.4 Where a CPD Tree is identified that may impact the security of an established control line, the location of this should be recorded and communicated up the chain of command. Treatment of such trees should be prioritised where possible to ensure control line security.
- 3.5.5 Consideration should be given to vehicle access to crew undertaking marking and/or treatment.

3.6 Treat hazard trees on the fire ground.

- 3.6.1 Treat hazard trees before and after the passage of fire on access routes, assembly areas, and control lines in accordance with the hierarchy of risk controls. Refer to Schedule 3 for hazard tree treatment options.
- 3.6.2 Consider evacuation of treed areas when conditions such as wind speed, treefall, or other factors become unfavourable.

Refer to Schedule 4 for an overview of hazard tree identification, assessment, marking and treatment.

4. Step 4: Mitigate the risk of unidentified hazard trees on the fire ground.

- 4.1 Where Crew Leaders/Sector/Division Commanders believe that the residual risk from unmarked hazard trees on the fire ground requires vigilance, awareness is to be maintained by reference in fire ground briefings and close supervision.

5. Step 5: Reassessment

- 5.1 In situations during fire operations where an area has been assessed, all personnel should maintain situational awareness and reassessment may need to be undertaken if the situation changes.

6. Step 6 Complete operations.

- 6.1 Incident Controllers are to ensure treatment of all identified CPD trees as part of the incident response and prior to transition to recovery. Identified CPD trees along roadsides are required to be treated prior to handing back roads to the

responsible road authority as per the processes set out in JSOP 3.10 Traffic Management and the Traffic Management Points Guidelines, so far as is reasonably practicable.

6.2 Where marked CPD Trees remain at the conclusion of the response phase, the Incident Controller will ensure the location of these trees forms part of the handover to recovery agencies and/or land manager if applicable.

SAFETY

Protection and preservation of life and relief of suffering is paramount. This includes: -

- Safety of emergency response personnel; and
- Safety of community members including those most at risk in emergencies both residents and visitors/tourists.

REFERENCE

Related Documents

[Emergency Management Act 2013](#)

[Victorian State Emergency Management Plan](#)

[AFAC Managing Tree Hazards](#)

[Tree Hazard Pictorial Guide](#)

[JSOP 08.02 Dynamic Risk Assessment](#)

VICSES SOP019 Operations Involving Trees

[EMV Tree Hazard Safety Fact Sheet](#)

Business Rule – Local Mutual Aid Plans – Bushfire Readiness and Response (EM-COP > Library > Doctrine)

REVIEW

Date Issue	10 October 2024
Date Effective	01 November 2024
Date to be Reviewed	November 2027
Date to Cease	N/A

AUTHORITY

The Emergency Management Commissioner has issued this JSOP under section 50 of the *Emergency Management Act 2013*.

Approved	Signature	Date
Rick Nugent Emergency Management Commissioner	Signed copy kept on file at the SCC	10 October 2024
Endorsed	Signature	Date
Jason Heffernan Chief Officer, CFA	Signed copy kept on file at the SCC	10 October 2024
Chris Hardman Chief Fire Officer, DEECA (FFMVic)	Signed copy kept on file at the SCC	10 October 2024
Gavin Freeman Commissioner, FRV	Signed copy kept on file at the SCC	10 October 2024
Tim Wiebusch Chief Officer Operations, VICSES	Signed copy kept on file at the SCC	10 October 2024

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Schedule 1

Qualifications and Endorsement for Hazard Tree Assessment

1. Only appropriately qualified or agency endorsed personnel can carry out a hazard tree assessment.

This does not preclude any other personnel from identifying a hazard tree and treating it appropriately by exclusion or communicating the risk to relevant qualified personnel.

2. Recognised qualifications to carry out hazard tree assessment is:

- 2.1 A qualified Tree Faller (meeting relevant national units of competency or agency accredited or formal timber industry endorsement in native forest) with either (22541VIC) *Basic Wildfire Awareness* training OR (PUAWHS002) *Maintain Safety at an Incident Scene* National Unit of Competency which includes completion of Tree Hazard Awareness training; or

- 2.2 A qualified Arborist with either (22023VIC) *Basic Wildfire Awareness* training OR (PUAOHS002B) *Maintain Safety at an Incident Scene* Unit of Competency which includes completion of Tree Hazard Awareness training.

3. Appropriate agency endorsement to carry out hazard tree assessment is:

- 3.1 Personnel that have completed the agency's Tree Hazard Assessor training course meet the requirements for assessing hazard trees.



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Schedule 2

Hazard Tree Marking System

The AFAC Managing Tree Hazards system for marking hazard trees has been used as the basis for this marking system and should read in conjunction with the contents of this JSOP.

Note: All marking symbols referred to in this schedule are to be painted >30cm on two sides of the tree being marked with a non-flammable yellow spray paint.



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1. Pre-fire and Pre-ignition

- 1.1 **Potential CPD Tree - Protection Assured (Circle Tree) – Marked with a yellow circle “O”** on (as yet) trees to be protected from fire (i.e. hand raked or machine cleared around and/or fire retardant applied) prior to the fire.
- 1.2 **Potential CPD Tree - Protection Not Assured (Slash Tree) – Marked with a yellow slash through a circle “Ø”** on hazardous trees (not yet CPD), or potential CPD trees which cannot be reliably protected from fire, are accordingly marked for removal. These will normally be removed/felled as part of access/control line preparation.
- 1.3 **Indicator tree – Marked with a yellow Ø or ⊗ and with an arrow and distance (e.g. 10m →)** used to indicate presence of tree hazard when symbol of Hazard tree is obscured by vegetation, difficult to see from control line, or the tree is too dangerous to mark.
- 1.4 **Tree with Hangers– Marked with a yellow Ø or ⊗ and with an arrow pointing up (e.g. ↑)** Augmented marking to indicate widow maker / hanger and allow for more deliberate risk mitigation actions. Treatment strategies must be considered and implemented such as removal of the hanger limb only or establishing exclusion zone before removal of the tree with hanger.
- 1.5 **CPD Tree (Cross Tree)** Although uncommon pre-fire or pre-ignition, **Marked with a yellow cross through a circle “⊗”** trees (see below) if identified, should be managed as outlined in section 2 below.

NB: Circle Trees marked for retention (and thus protection from fire), must have a high probability of surviving the fire intact based on the proposed protection measures and likely response resources available. If this is not reasonably assured, these trees are otherwise likely to become CPD Trees post-fire and add unnecessary complexity to the fire response and should be pre-emptively removed.

2. Initial Attack / First Response and Post-fire

- 2.1 **CPD Tree (Cross Tree) – Marked in yellow with a cross through a circle “⊗”:**
Where it is considered by qualified or endorsed personnel (refer to Schedule 1) that in the circumstances it is safe to mark the tree, a Cross Tree is marked to represent a “Clear and Present Danger” and an exclusion zone is established (refer to Schedule 3).
- 2.2 Where it is not safe to approach a CPD Tree, it is left unmarked and an exclusion zone is established (refer to Schedule 3). Personnel should also consider if it is appropriate to use an indicator tree to communicate the risk (where safe to do so).
- 2.3 **Yellow circle “O”** trees should be adequately resourced and patrolled to ensure they do not catch alight.

2.4 If protection of a **Yellow circle “O”** tree has failed and the tree catches alight, extinguishment should be attempted as soon as possible provided it is safe to do so. If the tree cannot be reliably and effectively extinguished and threatens the work space/control line, it then becomes a CPD (“⊗”) Tree and treated as per sections 2.1 and 2.2 above.

Refer to the Tree Hazard Pictorial Guide for illustrations on Hazard Tree Identification and Marking System.



Schedule 3

Hazard Tree Treatment Options

ASSESSMENT AREA

The work area

The work area consists of roads / tracks and other areas (paddocks, etc) used to access and leave the fireground. It also includes areas where personnel have been directed to work in (e.g. a blackout depth of 30m from an established control line) as well as staging areas, water points, traffic control points, and any other areas that personnel are conducting operational tasks.

Areas outside the work area

Areas beyond the work area may need to be considered where CPD Trees present a risk of falling into or sliding downhill into the work area.

TREATMENT OPTIONS

1. ELIMINATE

1.1 **Removal** of the hazard by felling trees is the preferred method of treating the hazard but may also expose personnel to risk and introduce additional risks (e.g. hangers in nearby trees). Hazard trees should be felled using plant/machinery fitted with appropriate safety guarding and structures wherever possible.

Hand felling of hazard trees should be avoided unless it is both essential and safe and in accordance with dynamic risk assessment. Only personnel qualified or endorsed by their agency (refer to Schedule 1) may hand fall hazard trees within the range limits of their competency and in accordance with relevant agency procedures. Hand felling must not be attempted following a machine attempt.

1.2 **Extinguishment** of burning trees in-situ by water, fire suppressant and/or retardant can also be attempted where it is safe to do so (in accordance with dynamic risk assessment). If an extinguished tree is assessed to be a CPD Tree after extinguishment it should still be felled/removed.

2. SUBSTITUTE

2.1 **Move** or **abandon** the control line if CPD Trees cannot be eliminated. Construct or select an alternative location for a control line.

3. ISOLATE

3.1 **Isolate** CPD Trees by locally re-aligning the control line (to provide at least a 2 tree length separation) or by establishing an exclusion zone.

3.2 Generally, an **exclusion zone** shall be a distance of at least 2 tree lengths around a tree hazard. The actual distance in each instance is determined by site factors such as slope and may be larger (or in some rare instances smaller) than 2 tree lengths.

3.3 The perimeter of an exclusion zone is marked using yellow and black hazard tape on sufficient individual trees to indicate its extent.



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- 3.4 Exclusion zones should only be entered by plant fitted with Falling Object Protection Systems (FOPS) or appropriately qualified or endorsed agency personnel (refer to Schedule 1) tasked to treat the CPD Tree.
- 3.5 Where an exclusion zone extends across a road/track, that exclusion needs to be effective and actively managed to ensure personnel do not drive through the zone.
- 3.5.1 Traffic control should be established to warn others and prevent personnel entering the area while the hazard remains.
- 3.5.2 If traffic control is not implementable, the existence of the exclusion zone impacting the road/track must be communicated to fireground personnel and closed with hazard tape that is stretched across the track/control line. This tape should be removed once the hazard tree is treated or falls naturally.
- 3.6 Consider **evacuation** of treed areas on the fire ground when tree-top wind-speed triggers are exceeded. This will vary depending on circumstances but will generally be triggered by an observation or forecast of gale force winds/wind gusts (i.e. Beaufort Wind Scale = 8, 63-75km/hr), or greater.
- 3.6.1 The Incident Controller will determine the level and type of response based on the risk and operational environment. In general, deployment of personnel into areas where the level of tree hazard is unacceptably high, will only be considered if there is an imminent threat to life.
- 3.6.2 Operations staff need to be prepared for rapid crew withdrawal if trees are falling, forecast becomes unfavourable, or weather deteriorates.
- 3.6.3 Where an area is dominated by hazard trees and the opportunity for safe work is severely restricted, crew levels should be reduced to essential tasks only and where possible only purpose-built (for falling object protection) vehicles should be used.

Note: To maintain its effectiveness as an alert, yellow and black hazard tape is only to be used to close roads/tracks and mark the location/exclusion zone of CPD Trees.



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Schedule 4

TREE HAZARD MITIGATION MATRIX

JSOP 8.03 - TREE HAZARD - BUSHFIRE (SCHEDULE 4)



TREE STAGE	PRE & POST FIRE	PRE & POST FIRE	PRE FIRE	PRE FIRE	PRE, DURING & POST FIRE	POST FIRE
	UN-ASSESSED TREE	SOUND TREE	POTENTIAL CPD TREE PROTECTION ASSURED	POTENTIAL CPD TREE PROTECTION NOT ASSURED	TREES WITH HANGERS	CLEAR AND PRESENT DANGER (CPD) TREE AND USE OF INDICATOR TREES
DEFINITION	An assessed tree that is yet to be assessed.	An assessed sound tree that is not currently hazardous and is not likely to become a CPD tree when exposed to fire or other disturbance associated with the incident.	A tree which in its current state does not appear hazardous, but may become a CPD tree if it catches alight or is impacted by wind or other fire related disturbance. It has a high probability of surviving the fire intact based on the proposed protection measures and likely response resources available.	A tree which in its current state does not appear hazardous, but may become a CPD tree if it catches alight or is impacted by wind or other fire related disturbance. It does NOT have a high probability of surviving the fire intact based on the proposed protection measures and likely response resources available. or A tree which in its current state may in part of wholly fall and impact personnel in its potential impact zone (but is not considered to do so during the expected time frame of the current operation).	Hangers are limbs which are hooked up or tangled in other limbs and can be dislodged by external factors (wind, impacts from machinery other trees, fire) during the operation.	A tree or branch that is likely to fall within the expected timeframe of the current operation and impact personnel in its potential impact zone.
HAZARD STATUS	UNKNOWN	LOW	LOW	INCREASED HAZARD	INCREASED HAZARD	EXTREME
MARKING SYMBOL	NO MARK	NO MARK - APPEARS SOUND	YELLOW CIRCLE	YELLOW SLASH IN A CIRCLE	YELLOW CROSS IN A CIRCLE AND ARROW ABOVE POINTING TOWARD THE HANGER	YELLOW CROSS IN A CIRCLE YELLOW CROSS IN A CIRCLE AND ARROW BELOW SHOWING DIRECTION AND DISTANCE TO HAZARD
INSTRUCTIONS FOR HAZARD TREE ASSESSMENT CREW	Tree not assessed and condition unknown. To avoid doubt, during or post fire, all un-assessed trees should be considered CPD trees until an assessment can be conducted.	Assessed and deemed sound. Carefully check both sides of tree for criteria matching potential CPD or CPD trees. If in doubt regarding its soundness, err on the side of Fire Fighter Safety.	Mark with a yellow 'circle' provided tree can be reliably protected from fire by measures and resources available. If not able to be protected, tree should be marked for removal. Tree can be safely worked under.	Mark with a yellow 'slash in a circle' for removal. If there is doubt on the tree being hazardous or not, defer to the side of safety and mark for removal. Note: Small trees may burn through quickly. Trees may fall uphill under the influence of strong wind.	Trees with hangers do not necessarily need to be felled, but the hazard needs to be marked and excluded with hazard tape as a minimum treatment.	Only approach and mark tree if safe to do so. Mark with a yellow 'cross in a circle' and establish an exclusion zone of 2 tree lengths around potential impact zone. Another treatment option is to re-route the control line away from the impact zone.
INSTRUCTIONS FOR FIRE LINE PERSONNEL	Approach unassessed trees with caution. If approaching tree to assess presents hazard to personnel, use tape to create an exclusion zone to identify the CPD tree. Assessments must be conducted on foot and not by 'Drive-by'.	Normal precautions, tree may be worked under. Dynamic Risk Assessment (DRA)	Pre-Fire - Clear around and protect from fire, normal precautions, ensure tree does not catch fire, tree may be worked under. Additional actions such as ground applied retardant or wetting down, pre-fire cabling under controlled conditions and intensive patrol may be requested. Post Fire - If protection fails and tree catches alight, it should be fully extinguished as soon as possible, if safe to do so. If the tree cannot be reliably and fully extinguished, and threatens the work space/control line, it becomes a CPD tree and is treated (marked and excluded) accordingly with a cross tree.	Ensure tree removal as soon as practicable. If tree has deteriorated, reclassify to CPD and create an exclusion zone. Tree presents significant additional risks but is currently assessed as unlikely to fall during the current operation; may be worked under with caution following dynamic risk assessment during fire emergencies as necessary. Monitor condition to ensure tree has not caught alight or deteriorated to a CPD tree.	Isolation of the risk by exclusion zone Exclude personnel and vehicles from the potential impact area using yellow and black barrier tape	If already too dangerous to work under, ensure taped-off exclusion zone for personnel and vehicles is established and maintained until the tree falls or can be removed. Consider use of an indicator tree if CPD tree is difficult to see or obscured.
INSTRUCTIONS FOR PLANT OPERATORS OR FALLER	Prohibit personnel entry into 'Not Assessed' areas for map up / blackout / patrol until hazard tree assessment and treatment has been implemented.	None (Although tree removal may be required for other control line construction purposes).	Provide adequate width of mineral earth break around tree to protect it from anticipated fire conditions. This must be achieved without damage to the tree, including the roots.	Remove, provided the operator or faller deems it safe to do so.	Elimination of the hazard Remove the hanger, or the tree with hanger. If the hanger is removed, the marking should also be removed to indicate it is no longer hazardous	Remove with extreme caution only when safety can be assured. Wherever possible removal by plant is preferred to hand felling.