Tarong Power Station

Cooling Water Dam

Emergency Action Plan (EAP)

STANWELL DOCUMENT NUMBER: ASM-PLAN-ENG-TPS-05
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<td>The current version will always be held in Stanwell's electronic document system and should be referred to for the most up to date version.</td>
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<td>Director Dam Safety - Queensland Dam Safety Regulator</td>
<td>Department of Natural Resources, Mines and Energy (DNRME)</td>
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<td>South Burnett Regional Council</td>
<td>PO Box 336, Kingaroy Qld 4610</td>
</tr>
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<td>4</td>
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<td>Local Disaster Management Group Coordinator</td>
<td>South Burnett Regional Council</td>
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<tr>
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<td></td>
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</tr>
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<td>5</td>
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<td>Nanango</td>
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<td>Gympie District Disaster Management Group</td>
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# Document History

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**Site:** Tarong Power Station

**Document Number:** ASM-PLAN-ENG-TPS-05

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<th>Endorsed/Checked By</th>
<th>Approved By</th>
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<td>10</td>
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<td>Minor change made to update contacts. Revised following DEWS feedback from previous revision</td>
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<td>16.11.2018</td>
<td>Document reviewed for annual DEWS submission. Contact list updated.</td>
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**Quick Reference**

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<th>Dam Hazard</th>
<th>NORMAL</th>
<th>ALERT</th>
<th>LEAN FORWARD</th>
<th>STAND-UP</th>
<th>STAND-DOWN</th>
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</thead>
<tbody>
<tr>
<td>Flood Event</td>
<td>Storage at or below FSL</td>
<td>Storage level between RL 435 and 435.2 m AHD</td>
<td>Storage level between RL 435.2 and 435.3 m AHD</td>
<td>Storage level greater than RL 435.3 m AHD</td>
<td>Storage level less than RL 435.0 m AHD and decreasing</td>
</tr>
<tr>
<td>(page 23)</td>
<td>Storage above FSL and spilling</td>
<td>Significant Flood Event.</td>
<td>Major Flood Event and/or imminent dam failure from overtopping</td>
<td>Flood event has passed</td>
<td></td>
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<tr>
<td></td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
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</tr>
<tr>
<td>Dam Integrity Risk</td>
<td>No significant dam integrity issues</td>
<td>Dam integrity issue identified. Could be:</td>
<td>Potential dam failure risk identified. Could be:</td>
<td>Imminent dam failure risk identified. Could be:</td>
<td>Potential Dam failure no longer considered a risk</td>
</tr>
<tr>
<td>(page 30)</td>
<td>- New or increased seepage identified</td>
<td>- Seepage increasing or appears turbid</td>
<td>- Seepage increasing uncontrollably, piping failure identified</td>
<td>- Seepage increasing uncontrollably, piping failure identified</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- New structural damage or movement identified such as cracking or sliding</td>
<td>- Structural damage or movement increasing</td>
<td>- Dam movement indicating structural failure could occur</td>
<td>- Dam movement indicating structural failure could occur</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Earthquake magnitude &gt;3 detected in the surrounding region or felt on site</td>
<td>- Erosion or scour increasing</td>
<td>- Erosion or scour indicating embankment or spillway failure could occur</td>
<td>- Erosion or scour indicating embankment or spillway failure could occur</td>
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<tr>
<td></td>
<td>- Erosion of spillway or embankment due to spillway discharge.</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
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<tr>
<td>Terrorist Activity</td>
<td>No terrorist activity</td>
<td>Suspected Risk of Terrorist Act. Could be:</td>
<td>Terrorist Act Confirmed, unsure if risk to dam</td>
<td>Terrorist Act Confirmed. Involves risk to dam integrity</td>
<td>Terrorist Act over, threat no longer exists</td>
</tr>
<tr>
<td>(page 40)</td>
<td>- Threats via audio communication</td>
<td>- Threats via audio communication</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
</tr>
<tr>
<td></td>
<td>- Unauthorised entry to site</td>
<td>- Unauthorised entry to site</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
</tr>
<tr>
<td></td>
<td>- Suspicious activity detected by personnel on site</td>
<td>- Suspicious activity detected by personnel on site</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
<td>Refer Section 4.2.1</td>
</tr>
</tbody>
</table>

Figure 1-1: Tarong CWD emergency level flow chart for flooding and hazard release (Refer to Sections 4.1 to 4.4 below for notification procedures, required responses and notification requirements for different scenarios.)
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1.0 INTRODUCTION

1.1. Purpose of this Plan

This Emergency Action Plan (EAP) provides the details of Stanwell Corporation’s (SCL) Plans with relation to the occurrence of an emergency condition at the Tarong Cooling Water Dam (CWD) and provides information necessary for emergency agencies to manage a downstream evacuation in the unlikely event of a potential dam failure or significant flood event through the spillway.

The main purpose of the EAP is to ensure that timely warning is provided to the appropriate authorities in the event of a potential dam failure or significant flood event situation, and to provide relevant information for use in the emergency response to that situation. This EAP identifies emergency conditions at the CWD and describes the procedures that are to be followed in order to investigate the emergency conditions and provide warning to appropriate emergency managers in the event of a potential dam failure or significant flood event. This enables the emergency managers to implement measures for the protection of downstream persons and property.

This EAP also provides direction for operating staff in the handling of unsafe or emergency conditions where dam failure is unlikely, so that the dam can be returned to a safe condition with minimal delay.

This EAP has been developed in accordance with Emergency Action Plan for Referable Dam Guideline, (DNRME, 2017) which was drawn up to support the legislative requirement to develop an EAP under the Water Supply (Safety and Reliability) Act (2008). This EAP is also in line with the Water Legislation (Dam Safety) Amendment Bill 2017.

The location and description of the storage is given in Section 6.0 and drawings of the dam are provided in Appendix C.

This EAP details:

- The responsibilities of persons and organisations involved in the surveillance, maintenance, and operation of the dam, and the persons/organisations responsible for activating the EAP (Section 0);
- Dam hazards, dam hazard events and dam emergency events (Section 3.0);
- The procedure for identification, evaluation and classification of potential emergency conditions (Section 4.0);
- The how, when and the content of the of the notification and warning messages to be disseminated during a Dam Hazard, Dam Hazard Event, Emergency Event and once the event has ended (Section 4.0);
- Access and communication procedures that inform the development of warnings and notifications (Section 5.0);
- The persons and relevant entities to be notified in the event of an emergency situation (Section 0 and Appendix H);
- Assessment protocols designed to minimise the occurrence of events and to identify events as they occur (Section 7.0);
- The area which would be inundated by a dam failure (Appendix D);
- Training and Exercises (Section 8.0); and
- Preventative actions and contingency items (Section 9.0).

1.2. EAP Abbreviations

Abbreviations used within this document can be found in Table 1.

Table 1: EAP Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEP</td>
<td>Annual Exceedance Probability</td>
</tr>
<tr>
<td>AHD</td>
<td>Australian Height Datum</td>
</tr>
<tr>
<td>ANCOLD</td>
<td>Australian National Committee on Large Dams</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CWD</td>
<td>Cooling Water Dam</td>
</tr>
<tr>
<td>DCF</td>
<td>Dam Crest Flood (for an embankment dam) – flood event, which when routed through the storage with the storage initially at full supply level, results in still water in the storage excluding wind and wave effects, reaching the lowest point of the embankment crest.</td>
</tr>
<tr>
<td>DCL</td>
<td>Dam Crest Level</td>
</tr>
<tr>
<td>DNRME</td>
<td>The Department of Natural Resources, Mines and Energy</td>
</tr>
<tr>
<td>DFL</td>
<td>Design Flood Level</td>
</tr>
<tr>
<td>EA</td>
<td>'Emergency Alert' – notification system operated by QFES</td>
</tr>
<tr>
<td>EAP</td>
<td>Emergency Action Plan</td>
</tr>
<tr>
<td>EER</td>
<td>Emergency Event Report</td>
</tr>
<tr>
<td>FIA</td>
<td>Failure Impact Assessment</td>
</tr>
<tr>
<td>FRT</td>
<td>First Response Team</td>
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<tr>
<td>FSL</td>
<td>Full Supply Level;</td>
</tr>
<tr>
<td>LDC</td>
<td>Local Disaster Co-ordinator</td>
</tr>
<tr>
<td>LDMG / DDMG</td>
<td>Local Disaster Management Group / District Disaster Management Group</td>
</tr>
<tr>
<td>LDMP</td>
<td>Local Disaster Management Plan</td>
</tr>
<tr>
<td>MM</td>
<td>Modified Mercalli Intensity Scale</td>
</tr>
<tr>
<td>PAR</td>
<td>Population at Risk</td>
</tr>
<tr>
<td>PMF</td>
<td>Probable Maximum Flood</td>
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</table>
Abbreviation | Definition
---|---
PMF-F | Probable Maximum Flood - Failure
PMF-NF | Probable Maximum Flood – No Failure
PMP | Probable Maximum Precipitation - The theoretical greatest depth of precipitation for a given duration that is physically possible over a particular catchment.
QFES | Queensland Fire & Emergency Services
QPS | Queensland Police Service
SBRC | South Burnett Regional Council
SCL | Stanwell Corporation Limited
SDF | Sunny Day Failure

Table 2 Communication Plan Abbreviations

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<tr>
<th>Abbreviation</th>
<th>Role</th>
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<tr>
<td>SEC</td>
<td>Site Security (depends on the shift)</td>
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<tr>
<td>SS</td>
<td>Shift Superintendent (depends on the shift)</td>
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<tr>
<td>EC</td>
<td>Emergency Controller</td>
<td>Nominated at the time of event</td>
</tr>
<tr>
<td>IM</td>
<td>Incident Manager</td>
<td>Nominated at the time of event</td>
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<tr>
<td>TSM</td>
<td>Tarong Site Manager</td>
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</tr>
<tr>
<td>FRT</td>
<td>First Response Team</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>Engineering Manager</td>
<td></td>
</tr>
<tr>
<td>MESS</td>
<td>Mechanical Engineering Superintendent – Station</td>
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<tr>
<td>SSM</td>
<td>Site Services Manager</td>
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<tr>
<td>EVM</td>
<td>Environmental Manager</td>
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</tr>
<tr>
<td>CRM</td>
<td>Community and Indigenous Relations Manager</td>
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</tr>
<tr>
<td>LDC</td>
<td>Local Disaster Coordinator</td>
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<tr>
<td>LDMG</td>
<td>Local Disaster Management Group</td>
<td>Not available</td>
</tr>
<tr>
<td>COO</td>
<td>SCL Chief Operating Officer</td>
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<td>-----</td>
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<td></td>
</tr>
<tr>
<td>CEO</td>
<td>SCL Chief Executive Office</td>
<td></td>
</tr>
<tr>
<td>DSC</td>
<td>Dam Safety Consultant</td>
<td>Varies with each Dam Event</td>
</tr>
<tr>
<td>DSLO</td>
<td>Downstream Land Owners</td>
<td>Refer to Appendix E</td>
</tr>
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</table>
1.3. Safety Policy

Our Health and Safety Vision:

‘Zero Harm Today’

At Stanwell we are committed to achieving Zero Harm Today where we all go home from work without injury and illness every day.

We are committed to undertaking our business in a manner that prevents injury or illness to employees, visitors, contractors and the public who may be impacted by our work activities. We encourage best practice in health and safety management, process safety and a continuous improvement culture.

Stanwell is committed to ensuring the continued safe operation of its dams, by managing its dams in accordance with the Queensland Dam Safety Management Guidelines and the Australian National Committee on Large Dams (ANCOLD) Guidelines for Dam Safety Management.

1.4. Participation in Plan Development

This EAP has been developed in consultation with the South Burnett Regional Council (SBRC) and the South Burnett Local Disaster Management Group (LDMG), to confirm responsibilities, communication protocols and ensure that this plan aligns with the LDMG plans and processes. Copies of communications during the development of this EAP and their acceptance of their responsibilities are provided in Appendix F.
2.0 ROLES AND RESPONSIBILITIES

2.1. Assignment of Responsibilities

Table 3 lists the assigned roles and responsibilities under this EAP.

### Table 3: Assigned roles and responsibilities under EAP

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Responsible Position(s)</th>
<th>General Responsibilities</th>
<th>Emergency Responsibilities</th>
</tr>
</thead>
</table>
| Site Security (SEC) | 24-hour contact at Power Station | - Direct Emergency Calls from the Public & Media  
- Supports the Emergency Controller and directs external emergency services to the scene  
- Locks down the site |
| Shift Superintendent (SS) / Emergency Controller (EC) | Dam Operator  
Inspection, maintenance & operation of dam  
Update EAP annually in consultation with the Dam Safety Consultant  
Liaison with the Local Disaster Management Group | - Contacts Manager Engineering Services and Tarong Site Manager  
- Manages the Scene of the Event  
- Directs the Emergency Response Team |
| Incident Manager (IM) | Incident Manager  
Formulation, implementation and supervision of dam safety management program | - Activation / de-activation of this EAP  
- Activation of Emergency Response Team  
- Coordination of operations response  
- Authorisation of notification processes including downstream landholders |
| Tarong Site Manager (TSM) | Dam Owner  
Overall responsibility for dam safety | - Activation of the Incident Management Team  
- Notify and update the Chief Operations Officer or Crisis Leadership Team if formed |
| Emergency Response Team (ERT) | Primary Contact | - Carry out emergency response as directed by the Incident Management Team  
- Clean up action if required |
| Engineering Manager (EM) | Dam Inspector  
Dam inspection and maintenance services for Asset Manager – Tarong | - Consultation with DNRME and other regulators with respect to Dam Safety requirements  
- Consult specialist Dam Engineer  
- Notify Mechanical Engineering Superintendent (Station)  
- Notify Dam Safety (DNRME) of incident |
### Organisation

<table>
<thead>
<tr>
<th>Responsible Position(s)</th>
<th>General Responsibilities</th>
<th>Emergency Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering Superintendent, Station (MESS)</td>
<td>Dam Inspector</td>
<td>- Monitoring overflow of Cooling Water Dam (and Meandu Creek Dam/Ash Dam)</td>
</tr>
<tr>
<td></td>
<td>Dam inspection and maintenance services for Asset Manager – Tarong</td>
<td>- Provide advice and support the Engineering Manager</td>
</tr>
<tr>
<td>Site Services Manager (SSM)</td>
<td>Dam Operator</td>
<td>- Notifies the South Burnett Local Disaster Coordinator and Stanwell’s Tarong Site representative on this Group</td>
</tr>
<tr>
<td></td>
<td>Inspection, maintenance &amp; operation of dam</td>
<td>Raise the Emergency Alert Request</td>
</tr>
<tr>
<td></td>
<td>Update EAP annually in consultation with the Dam Safety Consultant</td>
<td>Liaison with the Local Disaster Management Group</td>
</tr>
<tr>
<td>Environmental Manager (EVM)</td>
<td>Primary Contact</td>
<td>- Notification of DES (Env) if toxic spill involved.</td>
</tr>
<tr>
<td>Community &amp; Indigenous Relations Manager (CRM)</td>
<td>Primary Contact</td>
<td>- Prepares and issues media communications and update as part of the Tarong Incident Management Group</td>
</tr>
<tr>
<td>South Burnett Local Disaster Management Group</td>
<td>Local Disaster Coordinator</td>
<td>- Receive advice from Stanwell Site Services Manager to enact EAP</td>
</tr>
<tr>
<td></td>
<td>Primary Contact</td>
<td>- Notify District Disaster Management Group (DDMG) that the EAP has been enacted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Coordinates local disaster operations</td>
</tr>
</tbody>
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### 3.0 DAM HAZARDS

#### 3.1. Overview of Hazards and their Management

Typically, an emergency condition for a dam is defined in the Act as:

(a) A dam failure hazard;
(b) A downstream release hazard;
(c) A circumstance that potentially indicates an increase in the likelihood of a dam failure hazard or downstream release hazard happening.

The inclusion of (c) means that the hazard does not need to fully develop before an emergency condition is considered to have occurred.

Generally, the consequences of dam failure can be grouped into two basic types:

- Those that occur because of elevated dam lake levels during floods;
- Those that occur in the absence of other flooding (‘Sunny Day’ floods).
3.1.1. Principal Hazards

The principal hazards for the CWD identified are:

1. Flood events due to heavy rainfall – Hazard 1;
2. Dam integrity risks from piping, erosion or structural failure - Hazard 2; and
3. Terrorist Threat / activity or High energy impact – Hazard 3.

**Hazard 1** could result in dam failure due to deformation, overtopping, erosion or scouring of the embankment (e.g. Probable Maximum Flood Dam Failure or PMF-F, Probable Maximum Flood No Dam Failure or PMF-NF) causing inundation of the downstream flood plain. The PMF-F and PMF-NF flood inundation maps provide an indication of flooding extents expected and are shown on Figure D1.1 and Figure D1.2 and Figures D3.1 and Figure D4.2 in Appendix D.

**Hazard 2** could result in dam failure due to piping, cracking or slippage of the embankment or deformation of the spillway and can occur without any significant rainfall or flooding (Sunny Day Failure (SDF)) and can still result inundation of the downstream flood plain. An indication of flooding extents expected for the SDF is shown on Figure D1.1 and Figure D1.2 in Appendix D.

**Hazard 3** could result in dam failure due to intended or unintended damage of the spillway or embankment causing inundation of the downstream flood plain. Depending on whether a flood event is also occurring, either the SDF (no flooding) or the PMF-F (flooding) provide an indication of flooding extents and are shown in on Figure D2.1 and Figure D2.2 in Appendix D.

All dam hazards have the potential to become ‘hazard events’ which may progress to ‘emergency events’ as defined by the legislation (WLAB 2017; DNRME 2017).

The definitions of “dam hazard event”, “emergency event” and “relevant entity” in line with current legislation (WLAB 2017; DNRME 2017) are presented in Appendix A.

The prime means of detecting the development of a potential emergency conditions is through regular inspections of the CWD by the Dam Operator. (Refer Section 7.0)

The CWD has been designed to pass a Probable Maximum Flood (PMF) event, so that overtopping of the dam is not likely even in extreme flooding, although the spillway walls could overtop, and water could flow over the abutment. The most likely dam failure scenario would be a piping failure induced within the earth embankment, possibly because of an earthquake or unprecedented high storage levels. The prime means of detecting the onset of piping is through the regular routine dam inspections.
Although the CWD is currently in good condition and performing in accordance with expectations, it is recognised that an unsafe or emergency condition could occur at any time due to natural events or project related incidents.

If, during any of these inspections, or at any other time, an unsafe or unusual condition is noted, the Dam Operator will be notified immediately, via the 24-Hour Contact if necessary, so that an evaluation of the situation can be carried out and a determination made on the condition of the CWD.

If the Shift Superintendent and/or a Dam Safety Consultant, after evaluating the conditions at the CWD, determine that the potential for failure of the CWD exists, she/he will inform the Dam Operator who will activate the emergency response.

If the Shift Superintendent determines that the unsafe condition will not lead to failure of the embankment in the short term, she/he will arrange for an inspection of the CWD by a Dam Safety Consultant and take the necessary steps to have the unsafe condition rectified. She/he will inform the Dam Operator of the measures required to rectify the problem.

If a Dam Inspector or Operator observes a dam failure such as a flow of water through a breach in the CWD, she/he will inform the Dam Operator who will activate the Emergency Response.

If the Dam Operator is unable to notify the South Burnett Local Disaster Management Group when the EAP engages, she/he will initiate the Emergency Alert System notification.

The water depth in the CWD is monitored daily and recorded. Relevant design drawings are provided in Appendix C. The current CWD hydraulic parameters are provided in Table 3.

### 3.1.2. Earthquake Events

For earthquake events, the Emergency Action Plan will be activated to ALERT stage if any earthquake that is felt on the Tarong Power Station or reported nearby.

Furthermore, Stanwell is registered to receive earthquake notifications through Geoscience Australia (Community Safety and Earth Monitoring Division for Earthquake Alerts and Tsunami Warning). If no earthquake is felt on site, the Emergency Action Plan will still be activated to ALERT stage if Stanwell receive a Geoscience Australia notification of an earthquake of magnitude greater than 3 within 100km of the Tarong Power Station.


Earthquake notifications from Geosciences Australia are typically sent within 20 minutes of an earthquake occurring. It is also important to note that this is not a tailored service.
A Tarong email group has been set up to receive messages in response to the receipt of earthquake notifications that meet the following criteria:

- Any earthquake of magnitude greater than 3 identified within 100km of the Tarong Power Station, or
- Any earthquake that is felt on the Tarong Power Station or reported nearby

The email group includes the following Stanwell Corporation personnel:

- Principal Civil Engineer - 
- Civil Engineer (Tarong) - 
- Mechanical Engineer Superintendent Station - 
- Engineering Manager (Acting)- 
- Site Services Manager - 
- Tarong Operations Group (24 hour, 7 day per week coverage on site)

The magnitude defined by Geoscience Australia and may be referenced against the Modified Mercalli Intensity Scale (MM), as shown in Appendix I.

However, it is noted that SCL does not rely on this email notification. If there is an event that registers as an earthquake or is physically felt on site a dam inspection should be undertaken regardless of receipt of an email notification providing it is safe to do so.

3.1.3 Acts of Terrorism

To effectively control the unlikely event of a terrorist act, the following scenarios have been identified as ‘possible’:-

- A terrorist threat is received by Tarong staff;
- Attack on the spillway or embankment by explosive device, impact from aircraft of other air-borne devices. This may have the potential to cause spillway or embankment instability and will instigate a response action in line with Potential Dam Hazard 3 as described in Section 3.1.1.

Stanwell Corporation has existing internal procedures for threats as provided in:

- Stanwell Crisis Leadership Plan, Stanwell Document Reference #13/113734.
- Tarong Power Station Incident Management Plan, Stanwell Document Reference #13/158121.

These documents clearly define the Roles and Responsibilities when a Crisis of Incident is declared.

The Stanwell Crisis Event Evaluation and Escalation Matrix, #13/133528, provides an outline of how these processes interact and is included in Appendix G.

In all instances where an act of terrorism is suspected or confirmed, the Power Station Manager will contact the Policelink hotline on Ph. 131 444, local counter-terrorism authority and Stanwell Manager.
Enterprise Risk and Resilience, to activate Stanwell’s response. Stanwell will act on advice from these authorities as appropriate for the situation.

All actions will be undertaken only when it is safe to do so.

3.2. Dam Release and Dam Failure Inundation Hazards

Flood Inundation maps for dam failure hazards are included in Appendix D. The scenarios assessed were:

- Sunny day failure (SDF)
- PMF event with dam failure (PMF-F)
- PMF event with no dam failure (PMF-NF)

It should be noted that the ‘flood’ scenarios assume concurrent 1:100 AEP flood levels within the Cooling Water Dam and Meandu Creek catchment. All the dam failure scenarios have been shown to cause inundation of residential properties adjacent to the Meandu Creek floodplain. Due to uncertainties involved in modelling the dam failure, the inundation fringe areas shown on the maps are approximate and should only be used as a guide.

As discussed in Section 6, the spillway from the Cooling Water Dam discharges directly to Meandu Creek Dam, which is controlled by Stanwell Corporation. There is no direct discharge from the Cooling Water Dam off-site. The interaction between the Cooling Water Dam and Meandu Creek Dam leads to there being no need to prepare separate flood release hazard mapping for the Cooling Water Dam. The Cooling Water Dam is included as a catchment for the Meandu Creek Dam and therefore any flood release from the Cooling Water Dam will ultimately be discharged to Meandu Creek via the Meandu Creek Dam. Flood release hazards from Meandu Creek Dam are covered under the Meandu Creek Dam EAP.

The Cooling Water Dam Acceptable Flood Capacity Assessment indicated that the flood wave from a Sunny Day Failure of the Cooling Water Dam would flow into Meandu Creek downstream of the Meandu Creek Dam and travel through Meandu Creek with discharge rates exceeding 1,000 m$^3$/s. The travel time of a dam failure flood wave from the site to the more populated area downstream of the dam near Allen Road would be of the order of one hour.

Travel times for the SDF and flood failure event to key locations are summarised in Table 4 below. The SDF is considered the most likely failure scenario for the dam. It is noted that the flood failure event outlined in the FIA (refer Table 4 below) is for the Dam crest Flood (DCF). The DCF was determined to be a 1 in 33,000 AEP event as this met the Acceptable Flood Capacity outlined in a SunWater report.
A number of habitable dwellings are at risk from inundation from dam failure flooding under both Sunny Day and Flood Failure conditions. There are also a number of habitable dwellings at risk during normal flood events. Properties at risk of flooding downstream of the Cooling Water Dam have been identified in Appendix E. To assist with planning purposes, these properties have been listed in order of their distance from the dam (closest properties at the top of the list). Stanwell will undertake the notification of the PAR by using standard notification procedures. These include the use of the Emergency Alert tool, social media, radio, phone calls and in some cases door knocking.

The estimated total PAR for the PMF-F initiated failure of the Cooling Water Dam is 25. This is based on the properties downstream identified in Appendix E and shown on the mapping in Appendix B. A Failure Impact Assessment (FIA) was undertaken by Aurecon and reported in October 2014. Hydraulic modelling of a Sunny Day Failure (SDF) and PMF Flood Event (PMF-F) were undertaken in the investigation. The assessments completed as part of the study have identified that there is a PAR for
both sunny day failure and flood failure scenarios. It has been shown that the PAR is greater under the PMF-F scenario.

It should be noted that the dam could fail under flood conditions before the flood level reaches the PMF or Dam Crest Flood (DCF) level. If that occurs, then properties below the PMF level on the inundation plan could be inundated by the flood failure wave.

In the event of dam failure, evacuation efforts would focus from upstream properties to downstream, initially concentrating on properties adjacent to the Meandu Creek floodplain. Notification of these properties will be Stanwell using the techniques identified in Section 7.0.

Since the dam has an uncontrolled spillway there are no means available to reduce or otherwise control the outflow from the dam during flood events.

Stanwell will provide notification to the LDMG when flood releases reach a trigger level of 1m over the spillway (this corresponds to a flood magnitude of approximately 1:5 AEP. Properties downstream of the dam at risk from flooding will be warned by Stanwell via the methods identified above. On-going notifications will be made to the LDMG during the duration of the flood in accordance with procedures outlined in Section 5.0 below.
4.0 EMERGENCY EVENTS - RESPONSES AND NOTIFICATIONS

4.1. Escalation Levels

This EAP uses the Escalation Levels provided in Table 6 as part of the notification and action communications.

Table 6: EAP Escalation Levels

<table>
<thead>
<tr>
<th>Level</th>
<th>Conditions</th>
</tr>
</thead>
</table>
| Alert     | ▪ A heightened level of vigilance due to the possibility of an event occurring that requires increased frequency of monitoring. Duration of this level is dependent on the rate of development of the potential failure condition.  
▪ During the alert level, agreement on the need for and frequency of situational reports should be discussed with the disaster management group.  
▪ No further action may be required. However, the situation may need to be monitored by someone capable of assessing the potential of the threat. |
| Lean Forward | ▪ A heightened level of situational awareness of a potential dam hazard event. The disaster management group and dam operational staff are placed in a state of operational readiness to move to the 'Stand-up' level of activation in the event of an emergency event occurring or to mitigate the consequences of such an event.  
▪ The chief executive is advised of the status of the potential disaster event.  
▪ An increase in frequency of monitoring is undertaken.  
▪ Situational reports to the disaster management group and chief executive should continue as previously arranged or otherwise requested. |
| Stand Up | ▪ The disaster management group and the dam owner have mobilised resources and personnel as part of the EAP activation.  
▪ Any works that may become necessary at the dam site to minimise the risk of dam failure or minimise the consequences of failure should be undertaken.  
▪ Situational reports should be provided to the disaster management group and chief executive according to agreed timelines. |
| Stand Down | ▪ Transition from responding to an event back to normal core business and/or continuance of recovery operations.  
▪ The disaster management group and chief executive are advised of the end of the event.  
▪ There is no longer a requirement to respond to the event and the threat is decreasing. |
4.2. Emergency Events

Table 7 lists the various scenarios and their reference actions. The emergency action plan engages at the Stand-Up escalation level.

Table 7: Scenarios, Escalation and References

<table>
<thead>
<tr>
<th>Scenario (Hazard)</th>
<th>Initiating Event</th>
<th>Characteristics</th>
<th>Escalation Level</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood event</td>
<td>Flood</td>
<td>Water level expected to exceed spillway crest level</td>
<td>Alert</td>
<td>Refer Section 4.2.1 (Escalation Details)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Refer Section 4.3 (Notification Distribution)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Refer Section 4.4 (Notification Content)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lean Forward</td>
<td>Refer Section 4.2.1 (Escalation Details)</td>
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<td></td>
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<td></td>
<td></td>
<td>Refer Section 4.3 (Notification Distribution)</td>
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<td></td>
<td>Refer Section 4.4 (Notification Content)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Stand-Up</td>
<td>Refer Section 4.2.1 (Escalation Details)</td>
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<td>Refer Section 4.3 (Notification Distribution)</td>
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<td></td>
<td></td>
<td>Refer Section 4.4 (Notification Content)</td>
</tr>
<tr>
<td>Dam integrity event (Piping) (Erosion) (Earthquake) (Structural Failure)</td>
<td>Embankment stability issues Seepage related issues</td>
<td>Dam crest deformation due to erosion or scouring Scouring of or severe damage to spillway Wave scour on crest due to wind and wave action Embankment toe or abutment groin scour due to spillway or outlet discharges Gullying of embankment due to rainfall Signs of distress in embankment such as cracking or deformation/ sliding Differential movements of walls etc. Seepage erosion or piping New springs, seeps or boggy areas Increase in seepage along outlet conduit Rapid increases or cloudy appearance of seepage</td>
<td>Alert</td>
<td>Refer Section 4.2.2 (Escalation Details)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Refer Section 4.3 (Notification Distribution)</td>
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<td></td>
<td>Refer Section 4.4 (Notification Content)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Lean Forward</td>
<td>Refer Section 4.2.2 (Escalation Details)</td>
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<td>Refer Section 4.3 (Notification Distribution)</td>
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<td></td>
<td>Stand-Up</td>
<td>Refer Section 4.2.2 (Escalation Details)</td>
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</tr>
<tr>
<td>Scenario (Hazard)</td>
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<td>Reference</td>
</tr>
<tr>
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</tr>
<tr>
<td>Failure of Embankment or Spillway (Terrorism)</td>
<td>Terrorist Threat</td>
<td>Threats via audio communication Unauthorized entry to site Suspicious activity detected by personnel on site</td>
<td>Alert</td>
<td>Refer Section 4.2.3 (Escalation Details) Refer Section 4.3 (Notification Distribution) Refer Section 4.4 (Notification Content)</td>
</tr>
<tr>
<td>Lean Forward</td>
<td></td>
<td></td>
<td>Lean Forward</td>
<td>Refer Section 4.2.3 (Escalation Details) Refer Section 4.3 (Notification Distribution) Refer Section 4.4 (Notification Content)</td>
</tr>
<tr>
<td>Stand-Up</td>
<td></td>
<td></td>
<td>Stand-Up</td>
<td>Refer Section 4.2.3 (Escalation Details) Refer Section 4.3 (Notification Distribution) Refer Section 4.4 (Notification Content)</td>
</tr>
</tbody>
</table>
4.2.1. Flood Event

This section covers hazard characteristics for flooding scenarios and the process for risk elevation. Table 8 outlines the hazard characteristics for flooding scenarios and the notification process. This table is to be read in conjunction with Figure 4-1 that illustrates the notification flow chart for flooding. Section 4.4 outlines the messages to be provided to PAR under flooding events.

Table 8: Flooding scenario - no structural issues

<table>
<thead>
<tr>
<th>Potential problem</th>
<th>Activation level</th>
<th>General characteristics</th>
<th>When and what to check</th>
</tr>
</thead>
</table>
| Flooding and rainfall events      |                  | Water level in the dam is at 435mAHD OR Water level in the dam is rising between 435mAHD and 435.2mAHD | **Shift Superintendent (SS) / Emergency Controller (EC)**
  - Activate this EAP
  - Monitor reservoir water levels and notify MESS, EM and TSM

**Mechanical Engineering Superintendent – Station (MESS)**
  - Inspect the dam at least daily. During the inspection looks for signs of damage occurring. This includes such things as sink holes, slumps, erosion, springs, cracks, high seepage flows or any deformations. Photograph any damage identified. If any damage is noted refer to the appropriate emergency procedures, as listed within other sections of this table.
  - Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.
  - Record the rainfall at regular intervals.
  - Using the sheets included in Appendix D, record the reservoir level and plot a graph of storage levels versus time so that the trend of the inflows may be monitored.
  - Initiate manual readings of water levels and rainfall if instrument feed-back is lost

**Site Services Manager (SSM)**
  - Notify LDC and DNRME that the EAP has been activated to 'Alert' stage
<table>
<thead>
<tr>
<th>Potential problem</th>
<th>Activation level</th>
<th>General characteristics</th>
<th>When and what to check</th>
</tr>
</thead>
</table>
| **Lean Forward**  |                  | Water level in the dam is at 435.2m AHD OR Water level in the dam is rising between 435.2m AHD and 435.3m AHD | \( \text{Engineering Manager (EM)} \\
\text{- No Action.} \\
\text{Tarong Site Manager (TSM)} \\
\text{- Authorise notification processes including:} \\
\text{LDC,} \\
\text{DSL,} \\
\text{DDS-DNRME} \\
\text{Incident Manager (IM)} \\
\text{- Review all event logs, records and reports from the incident} |
|                   |                  | An indication of downstream flooding extents expected to be generated from events of this magnitude are shown in Figure D2 (Appendix D). | \( \text{Shift Superintendent (SS) / Emergency Controller (EC)} \\
\text{- Monitor water levels in the dam every 2 hours (from the T3000 control system) and notify the EM on reservoir levels.} \\
\text{Mechanical Engineering Superintendent – Station (MESS)} \\
\text{- Inspect dam as per Alert phase. Increase dam inspections to twice daily (a.m. and p.m.). If required, technical advice will be sought from the DSC.} \\
\text{- Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.} \\
\text{- Monitor water levels in the dam every 2 hours and notify the EM on reservoir levels. Record water levels on sheets in Appendix J as per advice in Alert phase.} \\
\text{- Obtain rainfall forecast from the Bureau of Meteorology (BOM) and track progress and effects of flood and inform the EM of the flood forecast} \\
\text{- On detection of leakage and/or springs, proceed with the emergency actions for} \\
\text{Embarkment Stability – Seepage > Embarkment Stability – Structural} \\
\text{- Notify DNRME that the EAP has been activated to ‘Lean Forward’ stage} |
<table>
<thead>
<tr>
<th>Potential problem</th>
<th>Activation level</th>
<th>General characteristics</th>
<th>When and what to check</th>
</tr>
</thead>
</table>
| Site Services Manager (SSM) | | | - Notify LDC of dam status.  
- Notification to include current release rate, expected inundation levels and expected trend in release rate.  
- Stanwell to notify downstream properties (refer Appendix E) of dam status; |
| Engineering Manager (EM) | | | - Notify the DDS - DNRME of the flood status and critical events. Update daily  
- If necessary consult Dam Safety Consultant. |
| Tarong Site Manager (TSM) | | | - Ensure notification processes were authorised/actioned including:  
- LDC,  
- DSL,  
- DDS-DNRME |
| Incident Manager (IM) | | | - Review all event logs, records and reports on the incident  
- Activation of IMT  
- Activation of ERT  
- Coordination of Operations Response |
<p>| Stand-up | Downstream release hazard flows anticipated OR Water level in the dam is at or above 435.3mAHD | Shift Superintendent (SS) / Emergency Controller (EC) | - Monitor water levels in the dam every 2 hours (from the T3000 control system) and notify the EM on reservoir levels. |
| | | Mechanical Engineering Superintendent – Station (MESS) | |</p>
<table>
<thead>
<tr>
<th>Potential problem</th>
<th>Activation level</th>
<th>General characteristics</th>
<th>When and what to check</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk of failure initiating or downstream release hazard&lt;br&gt; This water level is approaching the PMF event for the Cooling Water Dam&lt;br&gt; If signs of structural issues exist OR&lt;br&gt; Dam failure is initiated, refer to Section 4.2.2 dam integrity event</td>
<td><strong>Red</strong></td>
<td></td>
<td>- Inspect dam as per Alert phase and include inspection of the auxiliary spillway and spillway chute. Increase dam inspections to 4 hourly daily. If required, technical advice will be sought from the DSC.&lt;br&gt; - Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.&lt;br&gt; - Monitor water levels in the dam every hour and notify the EM on reservoir levels. Record water levels on sheets in Appendix J as per advice in Alert phase.&lt;br&gt; - Obtain rainfall forecast from the Bureau of Meteorology (BOM) and track progress and effects of flood and inform the EM of the flood forecast.&lt;br&gt; - If damage has been detected, continue to follow emergency actions associated with the following depending on nature of dam instability occurring:&lt;br&gt;  • &gt; Embankment Stability – Structural&lt;br&gt;  • &gt; Embankment Stability – Seepage&lt;br&gt; - IF SAFE, monitor water levels in Meandu Creek downstream of the dam&lt;br&gt; - Notify DNRME that the EAP has been activated to ‘Stand Up’ stage</td>
</tr>
</tbody>
</table>

**Site Services Manager (SSM)**<br> - Stanwell to contact downstream landholders to inform them that the DAM IS LIKELY TO FAIL and that EVACUATION is recommended. Up to date contact details for downstream landowners are shown in Appendix E;<br> - Stanwell to issue a ‘Flood Warning’ message via Emergency Alert to downstream landholders – refer Appendix E that will initiate appropriate emergency action to safeguard persons in downstream areas.<br> - Activation of the Local Disaster Plan<br> - Inform the following persons and organisations THAT THE DAM IS LIKELY TO FAIL:<br>  • 1. LOCAL DISASTER COORDINATOR (LDC)<br>  • 2. Police

**Engineering Manager (EM)**<br> - Inform DDS - DNRME THAT THE DAM IS LIKELY TO FAIL.<br> - If necessary consult Dam Safety Consultant.
<table>
<thead>
<tr>
<th>Potential problem</th>
<th>Activation level</th>
<th>General characteristics</th>
<th>When and what to check</th>
</tr>
</thead>
</table>
| Stand-down        |                  | Lake levels falling to FSL (435.0mAH) | Tarong Site Manager (TSM)  
- Ensure notification processes were authorised/actioned including:  
- LDC,  
- DSL,  
- DDS-DNRME  

Incident Manager (IM)  
- Review all event logs, records and reports on the incident  
- Coordination of operations response  
- Notify and update the COO and CLT  

Shift Superintendent (SS) / Emergency Controller (EC)  
- Monitor reservoir water levels and notify Site Security (SEC), EM and TSM  

Mechanical Engineering Superintendent – Station (MESS)  
- Undertake a dam safety inspection and submit the report to the EM for review  
- After the event compile an Emergency Event Report and forward unedited copies to the IM  
- LogBook Entry  

Site Services Manager (SSM)  
- Inform LDC that the potential dam hazard emergency is over and request it to advise the PAR;  
- Submit report to SBRC where damage to the dam or potential dam safety issues have occurred  

Engineering Manager (EM)  
- Submit Emergency Event Report to the DDS - DNRME |
<table>
<thead>
<tr>
<th>Potential problem</th>
<th>Activation level</th>
<th>General characteristics</th>
<th>When and what to check</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Tarong Site Manager (TSM)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- No Action</td>
</tr>
<tr>
<td></td>
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<td></td>
<td><strong>Incident Manager (IM)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Review all event logs, records and reports on the incident and authorise their release to LDMG and DNRME</td>
</tr>
</tbody>
</table>
Notification Flow Chart for Flooding and Hazard Release

**Alert**
- Storage level between RL 435 and 435.2 m AHD
- Storage above FSL and spilling
  - Tarong Site Manager
  - Mechanical Engineering Superintendent (MESS)
  - Stanwell CEO or CLT
  - South Burnett LDMG
  - QFES Yarraman/ Nanango/ Kingaroy
  - SDCC for EA messaging*
  - DNRME - QLD Dam Safety Regulator

**Lean Forward**
- Storage level between RL 435.2 and 435.3 m AHD
- Significant Flood Event.
  - Tarong Site Manager
  - Mechanical Engineering Superintendent (MESS)
  - Stanwell CEO or CLT
  - South Burnett LDMG
  - QFES Yarraman/ Nanango/ Kingaroy
  - SDCC for EA messaging*
  - DNRME - QLD Dam Safety Regulator

**Stand-Up**
- Storage level greater than RL 435.3 m AHD
- Major Flood Event and/or imminent dam failure from overtopping
  - Tarong Site Manager
  - Mechanical Engineering Superintendent (MESS)
  - Stanwell CEO or CLT
  - South Burnett LDMG
  - QFES Yarraman/ Nanango/ Kingaroy
  - SDCC for EA messaging*
  - DNRME - QLD Dam Safety Regulator

**Stand-Down**
- Storage level less than RL 435.0 m AHD and decreasing
- Flood event has passed
  - Tarong Site Manager
  - Mechanical Engineering Superintendent (MESS)
  - Stanwell CEO or CLT
  - South Burnett LDMG
  - QFES Yarraman/ Nanango/ Kingaroy
  - SDCC for EA messaging*
  - DNRME - QLD Dam Safety Regulator

Notifications to LDMG or DD MG or QFES may not be required to be notified at ALERT as per the notification flow charts (If LEAN FORWARD not expected). If in doubt over the potential for the emergency condition to develop, complete all necessary notifications.

*If the QFES Emergency Alert system is not available, contacting downstream PAR listed in Appendix E may also be required.

Figure 4-1: Tarong CW dam notification flow chart for flood event
### 4.2.2. Dam Integrity Event – Piping, Erosion or Structural Failure

This section covers hazard failure characteristics for SDF failure scenarios, and the process for risk elevation. Table 9 outlines the hazard failure characteristics for SDF scenarios and the notification process. This table is to be read in conjunction with Figure 4-2 that illustrates the notification flow chart for SDF. Section 4.4 outlines the messages to be provided under SDF events.

#### Table 9: Sunny day failure scenario - embankment and seepage issues

<table>
<thead>
<tr>
<th>Potential problem</th>
<th>Activation level</th>
<th>General characteristics</th>
<th>When and what to check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dam integrity issues</td>
<td></td>
<td>Refer to Appendix D for flood inundation mapping.</td>
<td></td>
</tr>
<tr>
<td>Signs of distress in embankment such as cracking or deformation/ sliding</td>
<td>Alert</td>
<td>Identification during routine inspection of initial signs of embankment distress such as cracks or scarps near the crest and bulges at the toe.</td>
<td>Shift Superintendent (SS) / Emergency Controller (EC)</td>
</tr>
<tr>
<td>Earthquake</td>
<td></td>
<td></td>
<td>- Activate this EAP</td>
</tr>
<tr>
<td>Differential movements of walls etc.</td>
<td></td>
<td>Earthquake magnitude &gt;3 detected within 100km region or felt on site</td>
<td>- Inspect affected area of embankment to watch for signs of scour progressing. Undertake remedial action if practical.</td>
</tr>
<tr>
<td>Scouring of or severe damage to spillway or embankment due to flood event</td>
<td></td>
<td></td>
<td>Mechanical Engineering Superintendent – Station (MESS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- On receipt of damage reports, carry out a field inspection. If necessary, obtain specialist technical advice from a dam consultant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Monitor extent of scour or damage and take steps to remediate problem if practical. Photograph any damage.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- All information to be reported to Manager Engineering Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- On receipt of damage reports, carry out a field inspection. If necessary, obtain specialist technical advice from a dam consultant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Inspect affected area of embankment and look for source of seepage. Environmental changes such as vegetation damage, salt scalds, etc. can help to identify seepage areas. If necessary, obtain specialist technical advice from a dam consultant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Measure and review the rate of seepage flow and observe its clarity, keeping notes and photographs for the Dam Logbook. Where data indicates sudden unexplained increases in seepage, request Engineering Manager to inspect the dam and structures for signs of damage</td>
</tr>
</tbody>
</table>
- Using the sheets in Appendix J, record the reservoir level using and plot a graph of storage levels versus time. Record the rainfall (if any) at regular intervals.
- Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.
- All information to be reported to Manager Engineering Services
- Notify DNRME that the EAP has been activated to ‘Alert’ stage

(Earthquake)
- Respond to any information of an earthquake in the area. Assess its intensity on the Modified Mercalli Scale – refer details in Appendix I. (Earthquakes with intensities MM5 or greater have higher potential to damage the embankment).
- Inform the Manager Engineering Services of any seismic activity felt at the dam or in the region and assist in monitoring the performance of the dam.
- Review seepage records or alarms and where data indicates a sudden increase in seepage inspect the dam and structures for signs of damage.
- Immediately inspect the embankment, outlet pipe, and spillway structure for springs, deformation, cracking and erosion, concrete damage, etc. Check for signs of slumps, sink holes and erosion on the downstream face of the embankment, especially near the spillway and the pipe outlets.
- On detection of springs, sink holes or slumps, inform 1) the Manager Engineering Services and/or 2) FRT of the number, size and location. Photograph and monitor their development.

Site Services Manager (SSM)
- Stanwell to notify downstream properties;
- Notify LDC that the EAP has been activated to ‘Alert’ stage;
- (Earthquake) Request LDC to advise downstream properties

Engineering Manager (EM)
- No Action.

Tarong Site Manager (TSM)
- Instigate the formation of the Incident Management Team, if required.
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Lean Forward

- Authorise notification processes including:
  - LDC,
  - DSL,
  - DDS-DNRME
- Review all event logs, records and reports from the incident

Incident Manager (IM)
- Review all event logs, records and reports from the incident

<table>
<thead>
<tr>
<th>Lean Forward</th>
<th>Shift Superintendent (SS) / Emergency Controller (EC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause of scour continuing and erosion becoming significant to the point where stability may be starting to be impaired.</td>
<td>- N/A</td>
</tr>
<tr>
<td>An indication of downstream flooding extents expected to be generated from this event occurring is shown in Appendix D.</td>
<td><strong>Mechanical Engineering Superintendent – Station (MESS)</strong></td>
</tr>
<tr>
<td>Detection of signs of cloudy water in seepage - look for the source of cloudy water</td>
<td>- Inspect dam as per Alert phase. Increase dam inspections to twice daily (a.m. and p.m.). If required, technical advice will be sought from the Dam Safety Consultant.</td>
</tr>
<tr>
<td>Seismic activity felt at the dam or in the region</td>
<td>- If possible, organise emergency repairs to reduce the potential for scour to cause failure of the dam. Obtain prognoses of weather conditions from the BOM to determine the likelihood of bad weather preventing or hampering repairs</td>
</tr>
<tr>
<td></td>
<td>- Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.</td>
</tr>
<tr>
<td></td>
<td>- All information to be reported to Manager Engineering Services</td>
</tr>
<tr>
<td></td>
<td>- Inspect dam as per Alert phase. Increase dam inspections to twice daily (a.m. and p.m.). During the inspection note signs of sink holes, slumps, erosion, springs, cracks, high seepage flows or any deformations. If necessary, obtain specialist technical advice from a dam consultant. Photograph area of impact with video camera.</td>
</tr>
<tr>
<td></td>
<td>- If possible, organise emergency repairs to prevent the rate of seepage from causing failure of the dam.</td>
</tr>
<tr>
<td></td>
<td>- Obtain prognoses of weather conditions from the Bureau of Meteorological to determine the likelihood of bad weather preventing or hampering repairs</td>
</tr>
<tr>
<td></td>
<td>- If the damage is unlikely to lead to dam failure, continue monitoring the damage for signs of increased seepage</td>
</tr>
</tbody>
</table>
Damage detected during initial inspections includes increased seepage
OR
Intensity greater than 5MM

- Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.
- All information to be reported to Manager Engineering Services
- Notify DNRME that the EAP has been activated to ‘Lean Forward’ stage

Specifically for Earthquake:
- Immediately perform a dam safety inspection to confirm damage. During the inspection note signs of sink holes, slumps, erosion, springs, cracks, high seepage flows or any deformations. If necessary, obtain specialist technical advice from a dam consultant.
- On detection of structural damage, e.g. slumps, cracks etc., proceed with the emergency actions for Embankment Stability – Structural
- On detection of leakage and/or springs, proceed with the emergency actions for Embankment Stability – Seepage
- If possible, organise emergency repairs to prevent damage from causing failure of the dam. Obtain prognoses of weather conditions from the BOM to determine the likelihood of bad weather preventing or hampering repairs
- If the damage is unlikely to lead to dam failure, continue monitoring the damage for signs of increased seepage
- Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.
- All information to be reported to Manager Engineering Services

Site Services Manager (SSM)
- Stanwell to advise downstream properties;
- Notify LDC of current issue.
- Maintain regular contact with LOCAL DISASTER COORDINATOR (LDC) at least twice daily (a.m. and p.m.) to update on the status of the dam

Engineering Manager (EM)
- If reports from the Emergency Response Team and/or Mechanical Engineering Superintendent (Station) confirm that significant damage has occurred or an emergency situation is developing, immediately notify the Director Dam Safety, DNRME of the event.
- If embankment failure is likely to occur assess the necessity to pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease in loading on the structure, and to minimise the impact of any failure.

- If necessary consult Dam Safety Consultant.

- If reports from the Mechanical Engineering Superintendent (Station) confirm that significant damage has occurred or an emergency situation is developing, immediately notify the Director Dam Safety, DNRME of the event.

- If embankment failure is likely to occur assess the necessity to pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease loading on the structure, and to minimise the impact of any failure.

- If reports from the Mechanical Engineering Superintendent (Station) confirm that significant damage has occurred or an emergency situation is developing, immediately notify the Director Dam Safety, DNRME of the event.

- If embankment failure is likely to occur assess the necessity to pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease loading on the structure, and to minimise the impact of any failure.

**Tarong Site Manager (TSM)**
- Ensure notification processes were authorised/actioned including:
  - LDC,
  - DSL,
  - DDS-DNRME

**Incident Manager (IM)**
- Review all event logs, records and reports on the incident
  - Activation of IMT
  - Activation of ERT
  - Coordination of Operations Response

<table>
<thead>
<tr>
<th>Stand-up</th>
<th>Scouring progressing to state where the</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shift Superintendent (SS) / Emergency Controller (EC)</td>
</tr>
</tbody>
</table>
Safety of the dam is significantly impaired.

Loads on embankment increasing or cracking/ deformation increasing to state where the safety of the dam is significantly impaired

An indication of downstream flooding extents expected to be generated from this event occurring as a SDF is shown in Appendix E.

Seepage developing further. Discharge is clouding and increasing (piping failure has started)

Progressive internal erosion of the embankment or foundation to form an open conduit or pipe

Sufficient Water in storage to create a dam failure hazard

- N/A

**Mechanical Engineering Superintendent – Station (MESS)**

- Monitor extent of scour as per Alert phase. Increase dam inspections to 2 hourly. If required, technical advice will be sought from the Dam Safety Consultant.
- Further increase efforts to remediate problem, if practical
- Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.
- All information to be reported to Manager Engineering Services
- Review status of the dam and if dam failure is occurring or is considered imminent evacuate any areas of the site at risk from dam failure.
- In the event of an imminent dam failure, arrange for an inspection and determine any requirements for remedial works at the dam.
- If necessary, seek technical advice from the Dam Safety Consultant.
- If practical pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease loading on the structure, and to minimise the impact of any failure.
- Inform periodic (hourly) the Director Dam Safety, Queensland Water Supply Regulator, DNRME. If failure is occurring or has initiated, inform Director Dam Safety THAT THE DAM IS LIKELY TO FAIL.
- If embankment failure occurs, immediately report to the Incident Manager, evacuate the site where required and photograph the event using video camera (IF SAFE)

**Specifically for Earthquake:**

- Continue monitoring
- Carry out emergency actions depending on nature of dam instability occurring, as outlined above
- Photograph area of impact;

**Site Services Manager (SSM)**

- Stanwell to issue a ‘Flood Warning’ message via Emergency Alert as per the list in Appendix E - Downstream Landowner Contact Details – Emergency List.
- Identify all possible evacuations as required.
Seismic activity felt at the dam or in the region AND Damage detected during initial inspections includes increased seepage

- Notify LDC and the QLD Police of an imminent dam failure that will initiate appropriate emergency action to safeguard persons in downstream areas.
- Activation of the Local Disaster Plan
- Maintain contact with the LDC while the risk of dam failure remains.
- (Earthquake) Advise LDC to issue a 'Flood Warning' message via Emergency Alert;

**Specifically for Earthquake:**
- Advise LDC to issue a 'Flood Warning' message via Emergency Alert;
- Inform periodic (hourly) 1) the LDC and/or 2) Police representatives of the dam status and requirements for further notifications to downstream landholders. Identify if possible evacuations are required.
  - LDMG responsible for notifications to downstream landholders. A copy of contact details for property owners is also maintained in Meandu Creek – Downstream Landowner Contact Details – Emergency List.
  - The LDMG and/or the QLD Police, when notified of an imminent dam failure, will initiate appropriate emergency action to safeguard persons in downstream areas. This may involve activation of the Local Disaster Plan
- Maintain contact with the LDC while the risk of dam failure remains.

**Engineering Manager (EM)**
- Review status of the dam and if dam failure is occurring or is considered imminent evacuate any areas of the site at risk from dam failure.
- In the event of an imminent dam failure, arrange for an inspection and determine any requirements for remedial works at the dam. If necessary, seek technical advice from the Dam Safety Consultant.
- If practical pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease in loading on the structure, and to minimise the impact of any failure.
- Inform periodic (hourly) the Director Dam Safety, Queensland Water Supply Regulator, DNRME. If failure is occurring or has initiated, inform Director Dam Safety THAT THE DAM IS LIKELY TO FAIL.
- If embankment failure occurs, immediately report to the Incident Manager, evacuate the site where required and photograph the event using video camera (IF SAFE)
<table>
<thead>
<tr>
<th>Stand-down</th>
<th>Cause of erosion abates and risk of failure drops significantly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remedial works completed and risk of failure drops significantly</td>
</tr>
<tr>
<td></td>
<td>Remedial works completed and cause of seepage removed.</td>
</tr>
</tbody>
</table>

**Tarong Site Manager (TSM)**
- Ensure notification processes were authorised/actioned including:
- LDC,
- DSL,
- DDS-DNRME

**Incident Manager (IM)**
- Review all event logs, records and reports on the incident
- Coordination of operations response
- Notify and update the Chief Operations Officer or Crisis Leadership Team if formed
- If dam failure is imminent or initiating, arrange for additional steps to be taken to mitigate the effects of the damage.
- The DDS- DNRME may choose to direct emergency activities based on the extent and type of the damage.

**Shift Superintendent (SS) / Emergency Controller (EC)**
- N/A

**Mechanical Engineering Superintendent – Station (MESS)**
- Undertake a dam safety inspection and submit the report to the EM for review
- After the event compile an Emergency Event Report and forward unedited copies to the IM
- LogBook Entry

**Site Services Manager (SSM)**
- Inform LOCAL DISASTER COORDINATOR (LDC) that the potential dam hazard emergency is over and request it to advise the PAR;
- Submit report to LDMG where damage to the dam or potential dam safety issues has occurred

**Engineering Manager (EM)**
- If failure of the dam does not occur, arrange for a dam safety inspection after the event.
- Where emergency repairs have been carried out, arrange for construction details to be recorded
- Submit Emergency Event Report to the Director Dam Safety, Queensland Water Supply Regulator, DNRME

**Tarong Site Manager (TSM)**
- No Action

**Incident Manager (IM)**
- Review all event logs, records and reports on the incident and authorise their release to LDMG and DNRME
- Arrange for an investigation
Figure 4-2 Tarong CW dam notification flow chart for dam integrity issues

1. **Alert**
   - Dam integrity issue identified.
     - New or increased seepage
     - New structural damage or movement such as cracking or sliding
     - Earthquake magnitude >3 detected or felt on site
     - New erosion of spillway or embankment.

2. **Lean Forward**
   - Potential dam failure risk.
     - Seepage increasing or appears turbid
     - Structural damage or movement increasing
     - Erosion or scour increasing

3. **Stand-Up**
   - Imminent dam failure risk.
     - Seepage increasing uncontrollably, piping failure identified
     - Dam movement indicating structural failure could occur
     - Erosion or scour indicating embankment or spillway failure could occur

4. **Stand-Down**
   - Potential Dam failure no longer considered a risk

Notifications to LDMG or DDMG or QFES may not be required to be notified at ALERT as per the notification flow charts (If LEAN FORWARD not expected). If in doubt over the potential for the emergency condition to develop, complete all necessary notifications.

*If the QFES Emergency Alert system is not available, contacting downstream PAR listed in Appendix E may also be required.*
4.2.3. Terrorism Event

This section covers hazard failure characteristics for SDF and embankment failure scenarios, and the process for risk elevation. Table 10 outlines the hazard failure characteristics for terrorism scenarios and the notification process. This table is to be read in conjunction with Figure 4-3: Tarong CW dam notification flow chart for terrorism that illustrates the notification flow chart for terrorism. Section 4.4 outlines the messages to be provided under terrorism events.

Table 10: Terrorism failure scenario - embankment and scouring issues

<table>
<thead>
<tr>
<th>Potential problem</th>
<th>Activation level</th>
<th>General characteristics</th>
<th>When and what to check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embankment stability issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Upon receiving or identifying terrorist related threat, Stanwell shall trigger its security protocol for terrorist activities, including notifying QPS via Policelink at 131 444 and QPS, Nanango. First and foremost, the safety of Stanwell personnel must be confirmed. In line with Stanwell’s security protocol, Police shall be escorted by Stanwell's representatives including the Stanwell personnel to determine the status of the terrorist threat and the extent of damage if the attack has already occurred.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Dam failure triggers for terrorist attack are generally similar to those for sunny day failure and the Figures for sunny day failure should be referred to identify impact zone expected from a terrorist attack failure (Appendix D).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Terrorist Activity | Alert | Suspected Risk of Terrorist Act. Could be: - Threats via audio communication - Unauthorised entry to site - Suspicious activity detected | IF SAFE (Police escort may be required and to be determined by SS/EC in consultation with QPS): |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Shift Superintendent (SS) / Emergency Controller (EC) - Activate this EAP</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mechanical Engineering Superintendent – Station (MESS) - No Action</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Site Services Manager (SSM) - No Action</td>
<td></td>
</tr>
<tr>
<td>Role</td>
<td>Action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>---------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Manager (EM)</td>
<td>No Action.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tarong Site Manager (TSM)</td>
<td>No Action.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incident Manager (IM)</td>
<td>Review all event logs, records and reports from the incident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean Forward</td>
<td>Terrorist Act Confirmed, unsure if risk to dam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shift Superintendent (SS) / Emergency Controller (EC)</td>
<td>No Action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering Superintendent – Station (MESS)</td>
<td>No Action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Services Manager (SSM)</td>
<td>No Action.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Manager (EM)</td>
<td>No Action.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tarong Site Manager (TSM)</td>
<td>No Action.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incident Manager (IM)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stand-up</td>
<td>Terrorist Act Confirmed. Involves risk to dam integrity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Shift Superintendent (SS) / Emergency Controller (EC)**
- If any suspicious behaviour noticed, contact TSM OR ESM OR SSM advice.
- If instructed by TSM OR ESM OR SSM, ring
- the site internal phone number **555** or
- the external phone number **4160 9444**
- *This enacts the Tarong Site Emergency Response Process - TAR-MAN-08: Emergency Control and Incident Management Plan for Tarong and Tarong North Power Stations.*
- Continue recording all communications
- Undertake surveillance inspect dam (if safe)
- Photograph/video the damage from a safe point
- Vacate the immediate vicinity of the affected area

**Mechanical Engineering Superintendent – Station (MESS)**
- No Action

**Site Services Manager (SSM)**
- Continue monitoring
- Carry out emergency actions depending on nature of dam instability occurring, as follows:
  - Embankment Stability – Structural
  - Embankment Stability – Seepage
- Inspect dam (if safe) and ensure all security measures are in place (locked gates, etc.)
- Photograph/video the damage from a safe point and record using the record sheets in Appendix J
- Close any affected roads, if not already closed by others
- Log Book entry
- Vacate the immediate vicinity of the affected area

**Engineering Manager (EM)**
- Continue monitoring
- Carry out emergency actions depending on nature of dam instability occurring, as follows:
  - Embankment Stability – Structural
  - Embankment Stability – Seepage
- Photograph area of impact;

**Tarong Site Manager (TSM)**
- Continue monitoring
- Carry out emergency actions depending on nature of dam instability occurring, as follows:
  - Embankment Stability – Structural
  - Embankment Stability – Seepage
- Photograph area of impact;

**Incident Manager (IM)**
- Review all event logs, records and reports on the incident
- Coordination of operations response
- Notify and update the Chief Operations Officer or Crisis Leadership Team if formed
- If dam failure is imminent or initiating, arrange for additional steps to be taken to mitigate the effects of the damage.
- The DDS- DNRME may choose to direct emergency activities based on the extent and type of the damage.

**Shift Superintendent (SS) / Emergency Controller (EC)**
- N/A

**Stand-down**

Terrorist Act resolved. Remedial works completed and risk of
<table>
<thead>
<tr>
<th>Role</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering Superintendent – Station (MESS)</td>
<td>- No Action</td>
</tr>
</tbody>
</table>
| Site Services Manager (SSM)  | - Carry out a dam safety inspection and submit the report to the Manager Engineering Services for review  
                                | - Compile an Emergency Event Report and forward unedited copies to the Incident Manager |
| Engineering Manager (EM)     | - Carry out a dam safety inspection and submit the report to the Manager Engineering Services for review  
                                | - Compile an Emergency Event Report and forward unedited copies to the Incident Manager  
                                | - Log book entry                                                              |
|                              | - Submit Emergency Event Report to the Director Dam Safety, Queensland Water Supply Regulator, DNRME |
| Tarong Site Manager (TSM)    | - Carry out a dam safety inspection and submit the report to the Manager Engineering Services for review  
                                | - Compile an Emergency Event Report and forward unedited copies to the Incident Manager |
| Incident Manager (IM)        | - Review all event logs, records and reports on the incident and authorise their release to LDMG and DNRME |
|                              | - If required, arrange for an investigation                             |
Notification Flow Chart for Terrorist Activity

**Alert**

- Suspected Risk of Terrorist Act. Could be:
  - Threats via audio communication
  - Unauthorised entry to site
  - Suspicious activity detected by personnel on site

1. Shift Superintendent (SS) / Emergency Controller
2. Tarong Site Manager
3. Technical Engineering Superintendent (MESS)
4. South Burnett (QPS)
5. DNRME - QLD Dam Safety Regulator
6. Stanwell CEO or CLT
7. South Burnett LDMS
8. Queensland Emergency Services (QFES)
9. Yarraman/Nanango/Kingaroy
10. SDCC for EA messaging*

1,2,3 Notification of Priority Order
CALLS BY DAM REPRESENTATIVE

**Lean Forward**

- Terrorist Act Confirmed, unsure if risk to dam

1. Shift Superintendent (SS) / Emergency Controller
2. Tarong Site Manager
3. Technical Engineering Superintendent (MESS)
4. South Burnett (QPS)
5. DNRME - QLD Dam Safety Regulator
6. Stanwell CEO or CLT
7. South Burnett LDMS
8. Queensland Emergency Services (QFES)
9. Yarraman/Nanango/Kingaroy
10. SDCC for EA messaging*

**Stand-Up**

- Terrorist Act Confirmed. Involves risk to dam integrity

1. Shift Superintendent (SS) / Emergency Controller
2. Tarong Site Manager
3. Technical Engineering Superintendent (MESS)
4. South Burnett (QPS)
5. DNRME - QLD Dam Safety Regulator
6. Stanwell CEO or CLT
7. South Burnett LDMS
8. Queensland Emergency Services (QFES)
9. Yarraman/Nanango/Kingaroy
10. SDCC for EA messaging*

**Stand-Down**

- Terrorist Act over, threat no longer exists

1. Shift Superintendent (SS) / Emergency Controller
2. Tarong Site Manager
3. Technical Engineering Superintendent (MESS)
4. South Burnett (QPS)
5. DNRME - QLD Dam Safety Regulator
6. Stanwell CEO or CLT
7. South Burnett LDMS
8. Queensland Emergency Services (QFES)
9. Yarraman/Nanango/Kingaroy
10. SDCC for EA messaging*

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ONLY UNDERTAKE EMERGENCY ACTIONS IF CONSIDERED SAFE TO DO SO. Notifications to LDMS or DDMS or QFES may not be required to be notified at ALERT as per the notification flow charts (If LEAN FORWARD not expected). If in doubt over the potential for the emergency condition to develop, complete all necessary notifications. If in doubt over the potential for the emergency condition to develop, complete all necessary notifications.

*If the QFES Emergency Alert systems are not available, contacting downstream PAR listed in Appendix E may also be required.

Figure 4-3: Tarong CW dam notification flow chart for terrorism event
4.3. Notification Distribution

The Queensland Emergency Alert Guideline (QEAG 2015) outlines requirements for alerting population at risk (PAR) to the associated dam hazard events and emergency events relating to identified hazards, such as hazards pertaining to dam failure. Table 11 details the message severity to be transmitted based on the associated activation level. These activation levels are consistent with the requirements of DNRME 2017 and WLAA 2017.

Distribution of these warnings will be dictated by the polygon area provided by Stanwell located in Appendix B. The polygon area was determined to be: the area covered by the PMF dam failure flood outline expanded to the nearest road crest.

Table 11: Hazard and emergency alert message outline (Adapted from QEAG 2015)

<table>
<thead>
<tr>
<th>Message Severity</th>
<th>Activation Level</th>
<th>Priority</th>
<th>General Meaning</th>
<th>Guidance on Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice</td>
<td>Alert</td>
<td>3</td>
<td>There is no immediate danger. General information to keep you up-to-date with developments.</td>
<td>Unlikely that EA will be used to disseminate Advice messages</td>
</tr>
<tr>
<td>Watch and Act</td>
<td>Lean Forward</td>
<td>2</td>
<td>It is likely that you may be impacted by the emergency. You may be in danger and should start taking action to protect your life and your family.</td>
<td>EA may be used to disseminate Watch messages</td>
</tr>
<tr>
<td>Warning</td>
<td>Stand Up</td>
<td>1</td>
<td>You will be impacted by the emergency. You are in danger and must take action immediately. Voice messages will be preceded by a four second sound of the Standard Emergency Warning Signal, followed by the words “Emergency, Emergency”.</td>
<td>Most likely that EA will be used to issue Emergency Warnings</td>
</tr>
</tbody>
</table>

Prior to issuing Emergency Alert messaging, where time permits Tarong will liaise with the South Burnett LDMG to agree on the messaging, particularly for events with natural flooding already occurring downstream. If the Emergency Alert system is not available, for notifying downstream Population at Risk (PAR), Stanwell will directly contact these PAR as listed in Appendix E.

4.4. Warnings and Notifications

A **notification** provides appropriate information and advice on a heightened risk to enable those potentially involved to make informed decisions about preparedness and safety.

A **warning** is the dissemination of an urgent message signalling an imminent hazard event, or emergency event and provides advice on protective measures.
The warning messages involve more than notifying people about the technical nature of a release of water from the dam. The message includes telling people if, when, and potentially even how, they need to act to protect life or property.

Warning messages inform those at risk, or whose property is at risk, of an impending escalation of an emergency event and aims to prompt an appropriate response or action from those persons. The required action is contained in the warning message, for example, 'seek further information', 'take shelter', ‘evacuate’ or ‘activate your personal emergency plan’.

Table 12 below outlines the content of notification and warning messages to be disseminated during different dam hazards, based on activation level.

Table 12: Prescribed alerts for notifications and warnings (Adapted from QEAG 2015)

<table>
<thead>
<tr>
<th>Message Type / Dam Hazard</th>
<th>Activation Level (Severity)</th>
<th>Voice Message</th>
<th>Text Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood Event</td>
<td>Alert (Advice)</td>
<td>This is a Flood Advice from the Queensland Fire and Emergency Services. The Meandu Creek affecting Stanwell is expected to peak causing flooding in //xx// hours. Properties in this area may experience flooding. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio, or visit <a href="http://www.disaster.qld.gov.au">www.disaster.qld.gov.au</a>. For flood assistance contact the State Emergency Service on 1 3 2 500</td>
<td>Flood Advice from QFES for Meandu Creek affecting Stanwell- Flood about //TIME// - Warn others- Leave area NOW or seek higher ground- Listen to radio</td>
</tr>
<tr>
<td></td>
<td>Lean Forward (Watch and Act)</td>
<td>This is a Flood Watch and Act message from the Queensland Fire and Emergency Services. The Meandu Creek affecting Stanwell is expected to peak causing moderate flooding in //xx// hours. Properties in this area are likely to experience flooding. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio, or visit <a href="http://www.disaster.qld.gov.au">www.disaster.qld.gov.au</a>. For flood assistance contact the State Emergency Service on 1 3 2 500</td>
<td>Flood Watch &amp; Act message from QFES for Meandu Creek affecting Stanwell- Flood at //TIME// - Warn others- Leave area NOW or seek higher ground- Listen to radio</td>
</tr>
<tr>
<td></td>
<td>Stand Up (Warning)</td>
<td>Emergency Emergency. This is a Flood Warning from the Queensland Fire and Emergency Services. The Meandu Creek affecting Stanwell is expected to peak causing major flooding at //TIME//. Properties in this area are likely to experience flooding. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio, or visit <a href="http://www.disaster.qld.gov.au">www.disaster.qld.gov.au</a>. For flood assistance contact the State Emergency Service on 1 3 2 500</td>
<td>Flood Warning from QFES for Meandu Creek affecting Stanwell-Major Flood at //TIME// - Warn others- Leave area NOW or seek higher ground- Listen to radio</td>
</tr>
<tr>
<td>Message Type / Dam Hazard</td>
<td>Activation Level (Severity)</td>
<td>Voice Message</td>
<td>Text Message</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------</td>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Dam Integrity Event – SDF event (Earthquake event) (Embankment Issue) or (Seepage Failure)</td>
<td>Alert (Advice)</td>
<td>This is a Flood Advice from the Queensland Fire and Emergency Services. Areas along Meandu Creek may experience rapidly rising water levels and possible property inundation over the next //xx// hours, posing a possible danger to residents. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio. For flood assistance contact the State Emergency Services on 132 500</td>
<td>Flood Advice from QFES for Meandu Creek- possible threat to life/property-Warn others- Leave area/prepare NOW or seek higher ground- Listen to radio</td>
</tr>
<tr>
<td>Dam Integrity Event – SDF event (Earthquake event) (Embankment Issue) or (Seepage Failure)</td>
<td>Lean Forward (Watch and Act)</td>
<td>This is a Flood Watch and Act message from the Queensland Fire and Emergency Services. Areas along Meandu Creek may experience rapidly rising water levels and property inundation over the next //xx// hours, posing a danger to residents. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio. For flood assistance contact the State Emergency Services on 132 500</td>
<td>Flood Watch &amp; Act message from QFES for Meandu Creek-possible threat to life/property-Warn others-Leave area/prepare NOW or seek higher ground-Listen to radio</td>
</tr>
<tr>
<td>Dam Integrity Event – SDF event (Earthquake event) (Embankment Issue) or (Seepage Failure)</td>
<td>Stand Up (Warning)</td>
<td>Emergency Emergency. This is a Flood Warning from the Queensland Fire and Emergency Services. Areas along Meandu Creek may experience rapidly rising water levels and property inundation over the next //xx// hours, posing an immediate danger to residents. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio. For flood assistance contact the State Emergency Services on 132 500</td>
<td>Flood Warning from QFES for Meandu Creek-immediate threat to life/property-Warn others-Leave area/prepare NOW or seek higher ground-Listen to radio</td>
</tr>
<tr>
<td>Terrorism (Embankment Issue) or (Seepage Failure)</td>
<td>Alert (Advice)</td>
<td>This is a Flood Advice from the Queensland Fire and Emergency Services. Areas along Meandu Creek may experience rapidly rising water levels and possible property inundation over the next //xx// hours, posing a possible danger to residents. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio. For flood assistance contact the State Emergency Services on 132 500</td>
<td>Flood Advice from QFES for Meandu Creek- possible threat to life/property-Warn others- Leave area/prepare NOW or seek higher ground- Listen to radio</td>
</tr>
<tr>
<td>Terrorism (Embankment Issue) or (Seepage Failure)</td>
<td>Lean Forward (Watch and Act)</td>
<td>This is a Flood Watch and Act message from the Queensland Fire and Emergency Services. Areas along Meandu Creek may experience rapidly rising water levels and property inundation over the next //xx// hours, posing a danger to residents. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio. For flood assistance contact the State Emergency Services on 132 500</td>
<td>Flood Watch &amp; Act message from QFES for Meandu Creek-possible threat to life/property-Warn others-Leave area/prepare NOW or seek higher ground-Listen to radio</td>
</tr>
<tr>
<td>Message Type / Dam Hazard</td>
<td>Activation Level (Severity)</td>
<td>Voice Message</td>
<td>Text Message</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Terrorism</td>
<td>Stand Up (Warning)</td>
<td>Emergency Emergency. This is a Flood Warning from the Queensland Fire and Emergency Services. Areas along Meandu Creek may experience rapidly rising water levels and property inundation over the next //xx// hours, posing an immediate danger to residents. You should warn neighbours, secure your belongings and move to higher ground now. For more information listen to local radio. For flood assistance contact the State Emergency Services on 132 500</td>
<td>Flood Warning from QFES for Meandu Creek—immediate threat to life/property—Warn others—Leave area/prepare NOW or seek higher ground—Listen to radio</td>
</tr>
</tbody>
</table>
5.0 ACCESS AND COMMUNICATIONS

5.1. Access

Normal local access to the Cooling Water Dam is via Nanango-Tarong Road. The dam is situated immediately adjacent to the Tarong Power Station. Access routes are shown on the Locality Plan and Alternative Access Routes Plan provided in Appendix C.

Travel time from Tarong Power Station to Nanango is approximately 20 mins via Nanango-Tarong Road. This road is subject to flooding. During flood events alternative access to the Power Station is via Tarong Power Station Road, off the D’Aguilar Highway.

No internal roads on site will be flooded by a release from the Cooling Water Dam. However, during larger storms the access off Nanango-Tarong Road is likely to be cut if the Meandu Creek Dam is discharging.

If a dam failure does occur, access to the dam area will be via Tarong Power Station Road and internal access through the Western Gate.

Overland access to both abutments should be possible during all weather conditions. The western abutment may be reached from Nanango Road. Access to the eastern abutment may be possible via the internal road through the Western Gate (if safe to do so).

5.2. Communications

5.2.1. Overview

During a flood release event or dam failure occurs, Stanwell has agreed to undertake the notification to downstream landholders. Stanwell will use a combination of social media, radio broadcasting, phone calls and door knocking to notify people at risk during flooding events. Regular contact will be provided by Stanwell personnel (refer Section 4.0) to provide information on the expected flooding levels and to make notifications as necessary to warn people occupying dwellings that may be affected by flood waters.

During non-flood dam failure event (Sunny Day Failures) Stanwell will provide notifications when it is identified that the dam structure is at risk. Further details regarding the scenarios notification protocol including trigger levels, refer to Sections 4.2.2 to 4.2.3 and Section 4.4.

Based on the dam break modelling undertaken, no flooding impacts are expected to be noticeable near habitable dwellings within the first hour following dam failure initiation occurs.
If a situation arises where the failure of the dam is considered possible (a dam emergency event), Stanwell will issue appropriate notifications to persons located downstream of the dam using the National Emergency Alert System and other media outlets.

This system is the national telephone based emergency warning system that sends messages to a nominated area:

- via landlines based on the location of the handset,
- via mobile phones based on an individual’s billing address, and
- for Telstra mobile account holders based on the device’s location.

A polygon in Google Earth KML format has been created to enclose the properties of affected persons. The polygon is ready to be uploaded by the State Disaster Co-ordination Centre (SDCC) to reside directly within the National Emergency Alert System for immediate use if needed for a dam failure emergency.

Pre-prepared notification messages have also been created for the different stages of the different hazard/emergency events which could apply to the Dam. Polygon set-out and texts of pre-prepared notification messages are shown in Appendix B and Table 12.

### 5.2.2. Redundancy of Warning Systems

If the Emergency Alert system is not available, for notifying downstream Population at Risk (PAR), Stanwell will directly contact these PAR as listed in Appendix E.

In the event that all established communication protocols become redundant including landlines and phone network signals

In the event that all established communication protocols become redundant, Stanwell with the assistance of the LDMG, will use radio broadcasting and door knocking to notify people at risk during flooding events. The order of priority will be given to downstream landowners highlighted in Appendix E.

Potential Affected Properties that are identified firstly, as

- Population at risk directly impacted as per the Failure Impact Assessment, followed by
- Properties adjacent to identified population at risk.

The priority of notifications is as follows

- QFES State Disaster Coordination Centre (SDCC) Watch Desk; for Emergency Alert System notification;
- Radio broadcasting;
- Door knocking
6.0 DAM DESCRIPTION AND BASIC DATA

6.1. Dam Overview

It is located in an un-named gully off Meandu Creek, approximately 1.0 km north-west of Tarong Power station and 11 km south-west of Nanango. The water in the dam is supplied from Wivenhoe and Boondooma Dams and is used at the power station in cooling processes. The dam was designed by Macdonald Wagner & Priddle Pty Ltd and constructed by Tarong Energy in 1982. The dam is currently owned and operated by Stanwell Corporation who own Tarong Power Station.

The Cooling Water Dam is located directly east of the Meandu Creek Dam, also owned and operated by Stanwell Corporation. A locality plan is included in Appendix C.

The CWD at Tarong is a referable dam under the Water Supply (Safety and Reliability) Act, 2008.

The dam has a storage capacity of 3000 ML and a catchment area of 55 ha.

This catchment area consists mainly of natural bushland and open cut mines. The dam receives runoff from this direct catchment.

The Main Dam embankment is approximately 700 m in length and is up to 25 m in height with a crest level varying between RL 436.75m to 437m AHD) and a crest width of 7 m. The dam comprises a zoned earthfill dam with central clay core and cut-off trench. The embankment was constructed with upstream and downstream batters of 1V:2H and 1V:3.5H, respectively.

The Saddle Dam embankment is approximately 239 m in length and is up to 3 m in height with a crest level of 436.75m AHD) and a crest width of 6 m.

The spillway connects an unlined and uncontrolled open channel with a crest level of 435 m AHD, a crest width of 5m and the spillway capacity is 19.7 m³/s.

The spillway from the dam flows to the Cooling Water Dam directly west of the Cooling Water Dam. In the vicinity of the spillway is a saddle dam. The crest level of the saddle dam is equal to the lowest level of the main embankment crest. The spillway to Cooling Water Dam is installed on the western side of the dam.

The spillway has capacity to pass the PMF event. The most likely failure scenario for the dam is a Sunny Day Failure event. Failure of the main embankment would cause a discharge of water directly to Meandu Creek, and not via Meandu Creek Dam. The risk of cascading failure of the two dams is therefore considered unlikely.

The outlet works comprise of a series of pumps installed on the right abutment well upstream of the embankment that have the capacity to pump at 100 L/s. These outlet works are completely separate.
from the embankment structure and there are no conduits running underneath or adjacent to the embankment.

Figure 6-1: Tarong CWD Location

Downstream of the dam, Meandu Creek flows north-east towards D’Auguilar Highway and on to where it meets Barker Creek. Downstream of the confluence with Meandu Creek, Barker creek flows through agricultural and open grassland before running parallel to Burnett Highway. Barker Creek generally runs north parallel to Burnett Highway until it eventually enters Lake Barambah more than 60km downstream from Site. Meandu Creek meanders through low to medium density residential areas such as Brooklands before reaching Lake Barambah.
6.2. Dam Reference Data

The principal details of the Tarong CWD are listed in Table 13.

**Table 13: Tarong CWD Principal Details**

<table>
<thead>
<tr>
<th>Location</th>
<th>Tarong Power Station, Not on a watercourse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dam ID</td>
<td>1491</td>
</tr>
<tr>
<td>Property description of lots</td>
<td>Lot 1 SP138386</td>
</tr>
<tr>
<td>Co-ordinates</td>
<td>Latitude 26°46'24&quot;S; Longitude 151°54'25&quot;E</td>
</tr>
<tr>
<td>Purpose</td>
<td>Industrial Water Supply</td>
</tr>
<tr>
<td>Full Supply Level</td>
<td>RL 435 m AHD</td>
</tr>
<tr>
<td>Full Storage Capacity</td>
<td>3,000 ML</td>
</tr>
<tr>
<td>Catchment (Surface Area)</td>
<td>55 ha</td>
</tr>
</tbody>
</table>

**MAIN DAM**

<table>
<thead>
<tr>
<th>Construction Type</th>
<th>Zoned earthfill dam with central clay core and cut-off trench</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dam Crest Level</td>
<td>RL 436.75 to 437 m AHD</td>
</tr>
<tr>
<td>Length</td>
<td>700 m</td>
</tr>
<tr>
<td>Dam Height</td>
<td>25 m</td>
</tr>
<tr>
<td>Crest width</td>
<td>7 m</td>
</tr>
</tbody>
</table>

**SADDLE DAM**

<table>
<thead>
<tr>
<th>Dam Crest Level</th>
<th>RL 436.75 m AHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>239 m</td>
</tr>
<tr>
<td>Dam Height</td>
<td>3 m</td>
</tr>
<tr>
<td>Crest width</td>
<td>6 m</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Unlined and uncontrolled open channel</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td><strong>Crest Level</strong></td>
<td>RL 435 m AHD</td>
</tr>
<tr>
<td><strong>Crest Length</strong></td>
<td>5 m</td>
</tr>
<tr>
<td><strong>Spillway Capacity</strong></td>
<td>19.7 m³/s</td>
</tr>
</tbody>
</table>

**OUTLET WORKS**

<table>
<thead>
<tr>
<th><strong>Location</strong></th>
<th>Right Bank, upstream of Embankment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td>100L/s</td>
</tr>
</tbody>
</table>

---

Figure 6-2: CWD Spillway Rating Curve¹

¹ Prepared for the previous EAP. Based on data presented in SunWater (2010), where a rating curve was derived based on an assumed broad crested weir coefficient.
6.3. Dam Catchment

The Cooling Water Dam is located directly east of the Meandu Creek Dam, also owned and operated by Stanwell Corporation. The Cooling Water Dam has a very small catchment area, 55 ha, consisting largely of the dam surface area itself. Given its small catchment the water level in the dam is largely controlled by the demand and supply pumping arrangements and therefore there is no regular discharge from the dam.

A catchment map prepared by Stanwell Corporation is presented in Appendix C.
6.1. Safety Management Organisation Chart

The organisation structure for dam safety management based on the roles and responsibilities listed in Table 3 is shown in Figure 6-4.
Figure 6-4: Dam Safety Management Organisation Chart
7.0 DAM SAFETY ASSESSMENTS AND INSPECTIONS

7.1. Routine Inspection and Assessment

In order to maintain the CWD in a safe condition, and detect any potential emergency conditions as soon as they begin to develop or become apparent, the following types of inspection are undertaken (DNRME 2003):

(a) **Routine Visual Inspection** – carried out 2 times per week by inspection staff under the direction of the Dam Operator, and directed towards detection of deficiencies in the CWD which may lead to an emergency condition e.g. uncontrolled seepage, instability etc;

(b) **Annual Inspection** – carried out by the Stanwell Shift Superintendent or Dam Safety Consultants, at which time a thorough on-site inspection is undertaken together with a detailed evaluation of data;

(c) **Comprehensive Inspection** – carries out by an experienced and qualified Dam Safety Consultant at 5-year intervals.

7.2. Event Inspections and Surveillance

Where a defect has been identified from routine inspection that has the potential for dam failure or in the case of a flood or other damaging event, the procedures shall be followed as per Sections 4.1 to 4.4 for identification, notification and management of any potential event.
8.0 TRAINING AND EXERCISES

8.1. Training Programme

Stanwell undertakes the following internal training of its personnel associated with the EAP and dam operations as listed following:

- All site management staff nominated with a role under this EAP will attend an annual desk top exercise session to familiarise individuals of specific roles and responsibilities.
- Where possible, a more detailed ‘rehearsal’ of the EAP is to take place approximately at 3 year intervals. These rehearsals will be managed as part of Stanwell’s broader emergency management framework.
- Each person involved in the inspection of the dam condition and monitoring will be suitable trained, so they are familiar in the early identification and notification requirements of a potential dam event or failure.

8.2. Exercises

A desk top exercise will be conducted each year. This exercise may be extended to include key stakeholders such as the local disaster management group(s); particularly for those with roles and responsibilities in implementing the EAP so they can improve the effectiveness of the plan.

Where possible, a more detailed ‘rehearsal’ of the EAP is to take place approximately at 3 year intervals. These rehearsals will be managed as part of Stanwell's broader emergency management framework.

Following each exercise, an analysis of the plans effectiveness during an exercise and post-emergency event response will be reviewed to identifying plan deficiencies and training requirements. Actions arising from the review will be updated in this EAP as a revision.

8.3. Stakeholder Education

Stanwell maintains a good relationship with the most at-risk landowner downstream of the CWD. When a new EAP is released, a Stanwell representative visits the aforementioned property and walks the residents through the existing processes and any amendments.

In addition to providing tailored education to the most at-risk landowner, Stanwell has committed to facilitate easy access of information pertaining to this EAP for the wider public. This is planned to be achieved by partnering with South Burnett Regional Council to provide a direct link to this information through the SBRC Emergency Management website.
9.0 PREVENTATIVE ACTIONS

In the event of a rapidly deteriorating structural deficiency which is likely to threaten the stability of the dam embankment (for example, due to internal erosion or following a major earthquake), the Tarong Site Incident Management Team shall ensure the following monitoring actions are established.

1. Ensure that a responsible person with portable communication is left in a safe position at the dam to monitor the emergency condition.

2. Restrict access to the dam area.


4. If possible, document the emergency condition with photographs and or video camera.

5. Regularly update the Incident Manager of any change in the emergency condition.

6. Do not take any unnecessary risks in undertaking the above actions.

Since the Cooling Water Dam’s spillway discharges to Meandu Creek Dam, all flood releases from the dam will be managed under the Meandu Creek Dam EAP. The spillway on the Cooling Water Dam is an uncontrolled spillway and there are no means available to reduce or otherwise control the outflow from the dam during flood events. However, modelling has indicated that discharge from the Cooling Water Dam to Meandu Creek Dam make up a very small proportion of total inflows to Meandu Creek.

The spillway for the Cooling Water Dam is located on the western side of the dam and not in the main dam embankment. The spillway has capacity to pass the PMF flood event. The most likely failure scenario for the Cooling Water Dam is a Sunny Day Failure. As this would not result in discharge to the Meandu Creek Dam, it is considered that the risk of a cascading failure of the two dams is very unlikely.

It may become necessary during an emergency to lower the reservoir level of the dam to decrease seepage and/or loading on the structure, and to minimise the impact of any failure. This would be performed using the pumps installed on the right abutment well upstream of the embankment that have the capacity to pump at 100 L/s, and would only be an option where an emergency condition was identified in the early stages.
10.0 REFERENCES

ANCOLD (2003), Guidelines on Dam Safety Management, Australian National Committee on Large Dams Inc.


## Appendix A – Definitions

### Table 14: Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AEP</strong></td>
<td>Annual exceedance probability - the probability of exceedance of a given magnitude storm or flood within a one-year period</td>
</tr>
<tr>
<td>(EAP) Activation</td>
<td>Is defined as actions undertaken by the dam owner as per the EAP in response to a dam event if:</td>
</tr>
<tr>
<td></td>
<td>1. persons or property may be harmed, because of the event;</td>
</tr>
<tr>
<td></td>
<td>2. a coordinated response involving two or more of the following relevant entities is likely to be required to respond to the event:</td>
</tr>
<tr>
<td></td>
<td>▪ each local group (LDMG) and district group (DDMG) for the emergency action plan;</td>
</tr>
<tr>
<td></td>
<td>▪ each local government whose local government area may be affected if a dam hazard event or emergency event were to happen for the dam;</td>
</tr>
<tr>
<td></td>
<td>▪ the DNRME chief executive;</td>
</tr>
<tr>
<td></td>
<td>▪ another entity the dam owner considers appropriate i.e. QPS, QFES.</td>
</tr>
<tr>
<td><strong>Alert</strong></td>
<td>The first stage of emergency response whereby a heightened level of vigilance is maintained due to the possibility of an emergency event occurring. Action is required to ensure the situation is monitored by someone capable of assessing the potential of the threat.</td>
</tr>
<tr>
<td><strong>Dam Hazard</strong></td>
<td>Dam hazard, for a dam, means a reasonably foreseeable situation or condition that may:</td>
</tr>
<tr>
<td></td>
<td>(a) cause or contribute to the failure of the dam, if the failure may cause harm to persons or property or;</td>
</tr>
<tr>
<td></td>
<td>(b) require an automatic or controlled release of water from the dam, if the release of the water may cause harm to persons or property.</td>
</tr>
<tr>
<td></td>
<td>(Refer s 352A of the Act.)</td>
</tr>
<tr>
<td><strong>Dam Hazard Event</strong></td>
<td>An event arising from a dam hazard if persons or property may be harmed because of the event and</td>
</tr>
<tr>
<td></td>
<td>(a) a coordinated response involving 2 or more of the relevant entities mentioned in paragraphs (b) to (d) of the definition relevant entity is unlikely to be required to respond to the event;</td>
</tr>
<tr>
<td></td>
<td>(b) the event is not an emergency event.</td>
</tr>
<tr>
<td></td>
<td>(Refer s 352A of the Act.)</td>
</tr>
<tr>
<td><strong>Emergency Event</strong></td>
<td>An event arising from a dam hazard if persons or property may be harmed because of the event, and any of the following apply:</td>
</tr>
<tr>
<td></td>
<td>(a) A coordinated response where two or more of the relevant entities, mentioned in paragraphs (b) to (d) of the definition relevant entity, are likely to be required to respond to the event.</td>
</tr>
<tr>
<td></td>
<td>(b) The event may arise because of a disaster situation declared under the DM Act.</td>
</tr>
<tr>
<td></td>
<td>(c) An entity performing functions under the State disaster management plan may, under that plan, require the owner of the dam to give the entity information about the event.</td>
</tr>
<tr>
<td><strong>Emergency Event Report (EER)</strong></td>
<td>A report on the performance of the dam and the functioning of the EAP during an emergency event which is presented to the chief executive following the end of the event. ('End' of an emergency event means when the dam hazard giving rise to the event is no longer a risk to persons or property.) (Refer s 352A of the Act)</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Failure Impact Assessment</strong></td>
<td>Is the process used under the Water Act 2000 to determine the number of people whose safety could be at risk should a dam fail (the ‘population at risk’) (Refer s 352T(2) of the Act)</td>
</tr>
</tbody>
</table>
| **Failure Impact Rating**       | A failure impact rating is a measure of the population at risk should the dam fail. There are two categories for referable dams:  
  - category 1: 2 to 100 people at risk if the dam were to fail;  
  - category 2: more than 100 people at risk if the dam were to fail. |
| **Hazard**                      | A source of potential harm, or a situation with a potential to cause loss (Emergency Management Australia, 2004). |
| **Inspector**                   | A Stanwell Corporation person based at Tarong Power Station who has been trained in dam safety observation skills. This person will carry out routine dam inspections at the CWD |
| **Lean Forward**                | The stage of emergency response prior to 'stand-up' whereby a heightened level of situational awareness of a disaster event (either current or impending) is maintained and a state of operational readiness is developed. Personnel at dam are on standby, ready to activate the EAP. |
| **Local Disaster Management Group** | Local disaster management groups are established to support local government disaster management activities. The local group is supported by the relevant district group if and when disaster management activities exceed the capacity of a local group. |
| **Population at Risk (PAR)**    | Population At Risk is an indicator of the potential for loss of life or injury in the event of a dam failure |
| **Probable Maximum Flood (PMF)**| Probable maximum flood - the flood hydrograph resulting from the probable maximum precipitation coupled with the worst flood producing catchment conditions that can be realistically expected in the prevailing meteorological conditions |
| **Referable Dam**               | A dam, or a proposed dam after its construction will be a referable dam if:  
  - a failure impact assessment of the dam, or the proposed dam, is required to be carried out under the Act;  
  - the assessment states the dam has, or the proposed dam after its construction will have, a category 1 or category 2 failure impact rating;  
  - the chief executive has, under s 349 of the Water Supply (Safety and Reliability) Act 2008, accepted the assessment. (Refer s 341 of the Act) |
| **Relevant Entities**           | Means each of the following under the emergency action plan for the dam:  
  - the persons who may be affected, or whose property may be affected, if a dam hazard event or emergency event were to |
happen for the dam E.g. owners of parcels of farmland adjacent to the dam, residents of a township;
(b) each local group and district group for the emergency action plan; and each local government whose local government area may be affected if a dam hazard event or emergency event were to happen for the dam;
(c) the chief executive;
(d) another entity the owner of the dam considers appropriate. E.g. the Queensland Police Service.
(Refer to s 352A of the Act.)

| **Stand Down** | The final stage of emergency response when there is no longer a requirement to respond to the event and the threat is no longer present. At ‘stand down’ there is a transition from responding to an event back to normal core business and/or recovery operations. |
| **Stand Up** | The operational state following ‘lean forward’ whereby resources are mobilised, personnel are activated and operational activities commenced. Moving into this operational state triggers the potential requirement for an EER. |
| **Sunny Day Failure (SDF)** | The failure of a dam without any other general flooding or spillway discharges. |
Appendix B – Polygon and Emergency Messages
EMERGENCY ALERT REQUEST FORM

Date | Time
--- | ---

Incident/Event:
Flash Flood Advice Tarong Power Station Cooling Water Dam

Requesting Officer:
Engineering Manager, Tarong Power Station

Prepared By:
Position:

Event Type
☐ Cyclone ☒ Flash Flood ☐ Flood ☐ Storm Surge ☐ Tsunami*
☐ Bushfire ☐ Chemical Spill ☐ Fire Incident ☐ Smoke or Toxic Plume
☐ Other (please specify): Dam Emergency Event

*NB. Tsunami EA campaigns will be sent as Location Based Text Message ONLY

Message Severity
☐ Emergency Warning** ☑ Watch & Act ☐ Advice

**N.B. activates the SEWS

Campaign Mode
☑ Voice ☐ SMS – Location Based ☐ SMS – Service Address Based

LDMG Advised?
☑ YES ☐ NO

DDC Advised?
☐ YES ☐ NO

Threat Direction Required?
☐ YES ☐ NO Note: Can only be used for Emergency Warnings. Indicate direction on map

1. EA Polygon Area:
Map attached

2. Spatial format:
Use only these file extensions:
* .dbf, *.prj, *.shp, *.shx
* .gml, *.xsd
* .kml
* .dat, *.id, *.map, *.tab
* .MIDI Sequence, *.mif

Indicate the format used:
For spatial data, is it supplied via
☑ DMportal - specify filenames below
☐ FTP - specify filenames below
☐ Email
☐ Other (please specify)

 Filename:

3. Handwrite (please use capitals for clarity) or Type Voice message (Ideally message should be less than 450 characters).
This is a Flash Flood Advice from the Queensland Fire and Emergency Services. Air e as in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation over the next few hours, posing a possible danger to residents. You should warn neighbours, secure your belongings and move to higher ground now. For more information, listen to local radio. For flood assistance, contact the State Emergency Service on 132 500.

4. Type or handwrite SMS below (maximum of 160 characters including spaces)
QFES FLOOD ADVICE Meandu Ck downstream Tarong Power Station-Possible threat life/property-Warn others-prepare NOW/seek higher ground/leave areaListen to radio

For use by SDCC
Authorising Officer Name: Manual Transmission: ☐
EMS Transmission:
EMS Report ID: ___________

EA Guidelines and the Emergency Alert Request Form Template are available at: www.disaster.qld.gov.au
# Emergency Alert Request Form

**EMERGENCY ALERT REQUEST FORM**

**Queensland Government**

**EMERGENCY ALERT REQUEST**

March 2015

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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</tbody>
</table>

**Incident/Event:**
Flash Flood Watch and Act Tarong Power Station Cooling Water Dam

**Requesting Officer:**
Engineering Manager, Tarong Power Station

**Prepared By:**
Position: Engineering Manager

**Event Type**
- [ ] Cyclone
- [x] Flash Flood
- [ ] Flood
- [ ] Storm Surge
- [ ] Tsunami*
- [ ] Bushfire
- [ ] Chemical Spill
- [ ] Fire Incident
- [ ] Smoke or Toxic Plume
- [ ] Other (please specify): Dam Emergency Event

*N.B. Tsunami EA campaigns will be sent as Location Based Text Message ONLY*

**Message Severity**
- [ ] Emergency Warning**
- [x] Watch & Act
- [ ] Advice

**N.B. activates the SEWS**

**Campaign Mode**
- [x] Voice
- [x] SMS – Location Based
- [ ] SMS – Service Address Based

**LDMG Advised?**
- [x] YES
- [ ] NO

**DDC Advised?**
- [ ] YES
- [x] NO

**Threat Direction Required?**
- [ ] YES
- [ ] NO

Note: Can only be used for Emergency Warnings. Indicate direction on map.

1. **EA Polygon Area:**
   - [x] Map attached

2. **Spatial format:**
   - Use only these file extensions:
     - *.dbf, *.prj, *.shp, *.shx
     - *.gml, *.xsd
     - *.kml
     - *.dat, *.id, *.map, *.tab
     - *.MIDI Sequence, *.mif
   - Indicate the format used:
     - For spatial data, is it supplied via:
       - DMportal - specify filenames below
       - FTP - specify filenames below
     - Email
     - Other (please specify)

3. **Handwrite (please use capitals for clarity) or Type Voice message (Ideally message should be less than 450 characters).**

   This is a Flash Flood Watch and Act message from the Queensland Fire and Emergency Services. Air e as in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and property inundation over the next 2 hours, posing a possible danger to residents. You should warn neighbours, secure your belongings and evacuate to your nearest evacuation centre now. For further information listen to your local radio, or visit www.disaster.qld.gov.au For flood assistance, contact the State Emergency Service on 1 3 2 5 00

4. **Type or handwrite SMS below (maximum of 160 characters including spaces)**
   - QFES FLOOD WATCH & ACT: Meandu Ck downstream Tarong Power Station-possible threat to life/property-Warn others-Leave area NOW/seek higher ground-Listen to radio

**For use by SDCC Authorising Officer Name:**
**Manual Transmission:**
**EMS Transmission:**
**EMS Report ID:**

**EA User Name:**
**EMS Report ID:**
EMERGENCY ALERT REQUEST

March 2015

Incident/Event:
Flash Flood Watch and Act Tarong Power Station Cooling Water Dam

Requesting Officer:
Engineering Manager, Tarong Power Station

Prepared By:
Position:
Engineering Manager

EA Guidelines and the Emergency Alert Request Form Template are available at: www.disaster.qld.gov.au

EMERGENCY ALERT REQUEST FORM

March 2015

Incident/Event:
Flash Flood Warning Tarong Power Station Cooling Water Dam

Requesting Officer:
Engineering Manager, Tarong Power Station

Prepared By:
Position:
Engineering Manager

Event Type
- ✔ Flash Flood
- ❏ Cyclone
- ❏ Bushfire
- ❏ Chemical Spill
- ❏ Fire Incident
- ❏ Flood
- ❏ Smoke or Toxic Plume
- ❏ Storm Surge
- ❏ Tsunami*
- ❏ Other (please specify): Dam Emergency Event

*NB. Tsunami EA campaigns will be sent as Location Based Text Message ONLY

Message Severity
- ❏ Emergency Warning**
- ❏ Watch & Act
- ❏ Advice

**N.B. activates the SEWS

Campaign Mode
- ❏ Voice
- ❏ SMS – Location Based
- ❏ SMS – Service Address Based
- ❏ LDMG Advised?
- ❏ YES
- ❏ NO

DDC Advised?
- ❏ YES
- ❏ NO

Threat Direction Required?
- ❏ YES
- ❏ NO

Note: Can only be used for Emergency Warnings. Indicate direction on map

1. EA Polygon Area:
- ❏ Map attached

2. Spatial format:
- Use only these file extensions:
  - *.dbf, *.prj, *.shp, *.shx
  - *.gml, *.xsd
  - *.kml
  - *.dat, *.id, *.map, *.tab
  - *.MIDI Sequence, *.mif

Indicate the format used:
- For spatial data, is it supplied via
  - ❏ DMportal - specify filenames below
  - ❏ FTP - specify filenames below
  - ❏ Email
  - ❏ Other (please specify)

Filename:
### EMERGENCY ALERT REQUEST

**March 2015**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Incident/Event:</th>
<th>Flash Flood Warning Tarong Power Station Cooling Water Dam</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Requesting Officer:</th>
<th>Engineering Manager, Tarong Power Station</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Prepared By:</th>
<th>Position:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Engineering Manager</td>
</tr>
</tbody>
</table>

#### 3. Handwrite (please use capitals for clarity) or Type Voice message *(Ideally message should be less than 450 characters)*.

- Emergency Emergency. This is a Flash Flood Warning from the Queensland Fire and Emergency Services. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and property inundation over the next 2 hours. You should warn neighbours, secure your belongings and evacuate to your nearest evacuation centre now. For further information listen to your local radio, or visit [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au) For flood assistance, contact the State Emergency Service on 132 500.

#### 4. Type or handwrite SMS below *(maximum of 160 characters including spaces)*

- QFES FLASH FLOOD WARNING: Meandu Ck downstream Tarong PwrSt IMMEDIATE THREAT TO LIFE & PROPERTY Warn others Leave area NOW or seek higher ground-Listen to radio

<table>
<thead>
<tr>
<th>For use by SDCC Authorising Officer Name:</th>
<th>Manual Transmission: ☐</th>
<th>EMS Transmission: ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA User Name:</td>
<td></td>
<td>EMS Report ID: _______</td>
</tr>
</tbody>
</table>

*EA Guidelines and the Emergency Alert Request Form Template are available at: www.disaster.qld.gov.au*
Appendix C – Drawings
Locality Map of Cooling Water Dam
Appendix D – Flood Inundation Maps
Appendix E – Potentially Affected Properties on PMF Event

Appendix E has been redacted
Appendix F – Evidence of Agreements
18 May 2020

Stanwell
PO Box 15
NANANGO QLD 4615

Dear Sir/Madam,

**Endorsement – Cooling Water Dam & Meandu Creek Dam – Emergency Action Plans**

We refer to Stanwell’s Cooling Water Dam and Meandu Creek Dam Emergency Action Plan (EAPs) which has been reviewed. We wish to advise that the EAPs have been endorsed by Aaron Meehan, Local Disaster Coordinator on behalf of the South Burnett Local Disaster Management Group.

We look forward to receiving a signed hard copy of the EAPs once approved.

Should you require any further information please contact

LOCAL DISASTER COORDINATOR/GENERAL MANAGER INFRASTRUCTURE

---

**Figure F1.1: LDMG agreement for EAP**

---

<table>
<thead>
<tr>
<th>Customer Service Centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackbutt 69 Hart Street</td>
</tr>
<tr>
<td>Kingaroy 45 Glendon Street</td>
</tr>
<tr>
<td>Nanango 46 Deyton Street</td>
</tr>
<tr>
<td>Murgon 42 Stephens Street West</td>
</tr>
<tr>
<td>Wondai Cir Mackenzie &amp; Scott Streets</td>
</tr>
</tbody>
</table>
Acknowledging receipt on 08/05/20.

Cheers,

Gympie Disaster District – Executive Officer
Queensland Police Service
PO Box 176 1 30 Channon Street 1 Gympie Q 4570 1 Australia
Gympie@police.qld.gov.au

From:  
Sent: Friday, 8 May 2020 03:03  
To: DDC.Gympie[NCR] <DDC.Gympie@police.qld.gov.au>  
Cc:  
Subject: RE: Tarong EAPs for MCD and CWD :: Changes to meet agreement

Hello DDC Team  

I hope you are going well. We have just updated the documents based on feedback from LDMG and SDCC. Seems to be good.

As discussed, would you be able to review these documents and send it back? As soon as we receive your comments (if any) we will amend and submit to DNRM.

Please see attached document for the Cooling Water Dam. (Part 2 contains Meandu Creek Dam).

Thanks in advance.

Best Regards,

Senior Flooding and Drainage Engineer, Aurecon

Figure F1.2: DDMG receipt confirmation
Appendix G - Stanwell Crisis Event Evaluation and Escalation Matrix
Stanwell Crisis Event Evaluation and Escalation Matrix

Security / Crisis / Incident / Emergency
This matrix supports a response to any continuity or security event which impacts on Stanwell.
Guidance notes which support this matrix can be found on the reverse of this document.

Event Occurs
Security Guidance Notes

These guidelines reflect a security threat (internal or external) with an impact on our People or Stanwell assets, reputation, compliance, health and safety or the environment.

**Impact Definitions**

- **Level 5 Severe**
  - Notification received that a perpetrator/interuder security threat to Stanwell is imminent or has occurred at one or multiple sites/offices.
  - Terrorist attack is imminent or has occurred and there may be a high risk of a security threat to Stanwell assets (ICT, information, physical or our people).
  - This level aligns with the National Counter-Terrorism Alert Levels (NCTAL) / Public Alert Level - Extreme

- **Level 4 Major**
  - Notification received that a perpetrator/interuder security threat to Stanwell is imminent or has occurred at one or multiple sites/offices.
  - Terrorist attack is imminent or has occurred and there may be a high risk of a security threat to Stanwell assets (ICT, information, physical or our people).
  - This level aligns with the National Counter-Terrorism Alert Levels (NCTAL) / Public Alert Level - High

- **Level 3 Moderate**
  - Notification received that Stanwell may incur a perpetrator/interuder security threat to a single site or office.
  - Terrorist attack could occur and there may be a specific security threat to a Stanwell site or office.
  - This level aligns with the National Counter-Terrorism Alert Levels (NCTAL) / Public Alert Level - Medium

- **Level 2 Minor**
  - Perpetrator/interuder security threat could occur but there is no indication that Stanwell is a target for attack.
  - Terrorist attack could occur but there is no specific security threat identified for Stanwell.
  - This level aligns with the National Counter-Terrorism Alert Levels (NCTAL) / Public Alert Level - Low

- **Level 1 Low Business as Usual**
  - Perpetrator/interuder security threat to Stanwell is not expected.
  - Terrorist attack is not expected and there is no specific security threat identified for Stanwell.
  - This level aligns with the National Counter-Terrorism Alert Levels (NCTAL) / Public Alert Level - Low
Appendix H – Emergency Communications Contact List

Appendix H has been redacted
Appendix I – Modified Mercalli Intensity Scale
### Table 16: Modified Mercalli Intensity Scale

<table>
<thead>
<tr>
<th>Earthquake Magnitude</th>
<th>Typical Maximum Modified Mercalli Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0-3.0</td>
<td>I</td>
</tr>
<tr>
<td>3.0-3.9</td>
<td>II-III</td>
</tr>
<tr>
<td>4.0-4.9</td>
<td>IV-V</td>
</tr>
<tr>
<td>5.0-5.9</td>
<td>VI-VII</td>
</tr>
<tr>
<td>6.0-6.9</td>
<td>VII-IX</td>
</tr>
<tr>
<td>7.0 and higher</td>
<td>VIII or higher</td>
</tr>
</tbody>
</table>

#### Abbreviated Modified Mercalli Intensity Scale

<table>
<thead>
<tr>
<th>Intensity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Not felt except by a very few under especially favourable conditions.</td>
</tr>
<tr>
<td>II</td>
<td>Felt only by a few persons at rest, especially on upper floors of buildings.</td>
</tr>
<tr>
<td>III</td>
<td>Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.</td>
</tr>
<tr>
<td>IV</td>
<td>Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.</td>
</tr>
<tr>
<td>V</td>
<td>Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.</td>
</tr>
<tr>
<td>VI</td>
<td>Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.</td>
</tr>
<tr>
<td>VII</td>
<td>Damage negligible in buildings of good design and construction; slight to moderate in well built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.</td>
</tr>
<tr>
<td>VIII</td>
<td>Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.</td>
</tr>
<tr>
<td>IX</td>
<td>Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.</td>
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<tr>
<td>X</td>
<td>Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.</td>
</tr>
<tr>
<td>XI</td>
<td>Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.</td>
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<tr>
<td>XII</td>
<td>Damage total. Lines of sight and level are distorted. Objects thrown into the air.</td>
</tr>
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RECORD OF RAINFALL DURING A FLOOD

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Rainfall (mm)</th>
<th>Daily Total (mm)</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td></td>
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</table>
Plot of water level versus time
NATURE OF THE EVENT

Describe the event (e.g. spillway discharge, earthquake, chemical spill, etc.)

Commencing Time..........Date........../........../.........
Finishing Time..........Date........../........../.........

DESCRIPTION OF THE EVENT

Describe in your own words the lead up to and progress of the event (e.g. a spillway discharge)
Include such information as listed below:
Weather conditions and rainfall in the catchment
The rate of rise of the storage
When the spillway was overtopped
Date and time of highest level
Briefly describe any immediate downstream damage caused by the discharge
Include any other information considered relevant

STATISTICS

Total inflow.............................Megalitres
Total discharge...........................Megalitres
Capacity of storage prior to inflow.....................%
Volume prior to inflow...............................Megalitres
Maximum inflow..............................Megalitres per day
Maximum discharge............................Megalitres per day

EVENT PROGRESS

Briefly describe the daily rate of storage rise, time to peak level, and weather conditions.
Attach copies of the Spillway Level Versus Time Graph, the Communications Record Sheet, and the Log of Events / Actions Sheet

GENERAL COMMENTS

Include in this section any observations or comments regarding the event, such as equipment malfunctions, safety issues or any suggestions which may improve monitoring and reporting of the event

DAMAGE REPORT

Detail any tailwater damage to the embankment or stream bank in the immediate area of the dam. Attach photos

ATTACHMENTS

Photos / video of the event
Spillway Level versus Time Graph
Communications Record Sheet
Log of Events / Action Sheet

Signed........................Designation.................................Date........../........../.........
Queensland Disaster Management System

The Queensland Disaster Management System operates on three distinct levels. These are:

- Local Government
- Disaster District
- State Government

A fourth level, The Commonwealth is also included in our Disaster Management System recognising that Queensland may need to seek Commonwealth support in times of disaster.

Each of these levels within the Queensland Disaster Management System has as its basis a committee structure supported by a disaster coordination centre. These committees and coordination centres are activated when required to manage and coordinate support for disaster stricken communities. When not activated, these committees meet to prepare for and practice their role within the Disaster Management System.

Figure 1 depicts the Queensland Disaster Management System including the link to the Commonwealth for National-level support when required.

Figure 1 – The Queensland Disaster Management System

Description of the System

The Queensland Disaster Management System has three principal tiers that quickly provide both technical and tangible assistance to disaster stricken communities.

Management of a disaster at the community level is conducted by Local Government who are responsible for the implementation of their Local Disaster Management Plan. If Local Governments require additional resources to manage the event, they are able to request support from their Disaster District Coordinator. This allows for the rapid mobilisation of resources at a regional or district level. If
Disaster District resources are inadequate or inappropriate, requests for assistance can be passed to State via the State Disaster Coordination Centre. Finally, when State resources are inadequate or inappropriate, support from the Commonwealth can be obtained via Emergency Management Australia (EMA).

A brief summary of each of the key components of the Queensland Disaster Management System is set out below:

- **Local Disaster Management Group.** (Formerly called Local Government Counter Disaster Committee). Local Disaster Management Groups (local groups) coordinate the response to a disaster at a local level. The Committees are usually chaired by the Mayor and the Local Government Chief Executive Officer is usually the Executive Officer of the committee. Local Government Counter Disaster Committees develop and maintain Counter Disaster Plans for their Shire. These Local Government Committees are best placed to decide what resources are needed, when they are needed and how best to apply such resources so as to minimise hardship and suffering. They play a key role in the Queensland Disaster Management System.

- **District Disaster Management Group** (formerly called Disaster District Control Group). There are 23 Disaster Districts in Queensland which are based on the Police Districts. The senior Police Officer in each district is designated as the Disaster District Coordinator who Chairs a Disaster District Control Group. These Disaster District Control Groups comprise representatives from regionally-based Queensland Government departments who are able to provide and coordinate whole-of-government support to disaster-stricken communities. The Disaster Districts perform a 'middle' management function within the Disaster Management System by providing coordinated State Government support when requested by Local Governments.

- **The State Disaster Coordination Group (SDCG)** is the working body of the State Disaster Management Group (State Group) at State-level. SDCG members are designated liaison officers from each of the Departments represented on the State Group. This Group is the primary mechanism through which coordinated whole-of-government State-level support is provided to disaster-stricken communities.

- **The State Disaster Management Group.** The State Disaster Management Group (State Group) is established as the principal organisation under the new Act for the purposes of disaster management throughout the State. It replaces the State Counter-Disaster Organisation and its executive, the Central Control Group. In particular, the State Group is responsible for disaster mitigation and disaster planning and preparation at a State level and for coordinating whole-of-Government response and recovery operations prior to, during and after a disaster impact. This includes accessing interstate and/or Commonwealth assistance when local and State resources are exhausted or not available.
The State Group comprises Chief Executive Officers (CEO’s) from all Queensland Government Departments. The CEO of the Department of the Premier and Cabinet is the Chair, while the Executive Director of Counter Disaster and Rescue Services is the Executive Officer.

• **Major Incidents Group (MIG).** The Queensland Government has established a MIG to provide high level Ministerial guidance and support in the event of a significant incident with major community consequences. Conceptually, membership of the MIG would be determined on an incident-by-incident basis and may include, but not be limited to:

  • Premier (Chair)
  • Treasurer
  • Attorney-General
  • Minister for Police
  • Minister for Emergency Services
  • Minister for Health

WEATHER INFORMATION (FLOOD WARNING)

Using the Internet [http://www.bom.gov.au/]
Appendix L – Annual Public Notice
NOTICE OF EMERGENCY ACTION PLAN

Meandu Creek Dam and Cooling Water Dam

Emergency Notification Process

Stanwell's Tarong Power Stations use water from the Meandu Creek Dam and Cooling Water Dam for its cooling systems to produce power for South East Queensland.

Stanwell advises that residents living within the Meandu Creek flood zone and inundation areas of the Meandu Creek Dam and Cooling Water Dams may receive a letter outlining the Emergency Alert notification systems which would be activated in the event of an emergency of either of these dams.

The letter to property holders in the Meandu Creek flood zone forms part of Stanwell’s preparedness for its Meandu Creek Dam and Cooling Water Dam Emergency actions Plans.

To check if your property is in the Meandu Creek flood zone visit

Appendix M – Letter to the downstream landholders – Update of contact details
Property Owner Name  
Address  
Suburb State P/code  

Dear [Property Owner],  

RE: EMERGENCY ACTION PLANS – MEANDU CREEK DAM AND TARONG COOLING WATER DAM Lot Nos; (your property)  

Stanwell’s Tarong Power Stations store and use water from the Meandu Creek Dam and Cooling Water Dam for its cooling systems to generate electricity for the National Electricity Market.  

In line with the Water Supply (Safety and Reliability) Act 2008 these are classified as large dams and determined “referable” by the Department of Energy and Water Supply.  

Under the Act, Stanwell is required to develop an Emergency Action Plan for these dams. As part of this process, your property has been identified as one that might be affected in the very unlikely event of a dam failure.  

In the event that you should ever be required to act to preserve life or property because of a dam failure, all mobile phones in the area where your property is situated would receive an SMS. This message would be sent by the Emergency Alert System that is controlled by the Local Disaster Management Group (please note this is not a Stanwell controlled system). All landline phones in the area would receive a voice message.  

The emergency alert system in our area is likely to be tested at some point. If you are within the notification area at the time of a test you will receive a mobile SMS or landline message generated by the Emergency Alert System. The message would indicate it is a “test” and not an actual emergency requiring you to act.  

Please be aware that it is your responsibility to manage your safety and the safety of others on your property, in the very unlikely event of a dam-related incident with potential to impact downstream properties.  


Stanwell regularly updates additional information about its Dam. Please see our website: 

To ensure Stanwell can contact you in the event of an emergency, please return the enclosed form via post, or alternatively email [Your information](mailto:Your information) Your information will ensure Stanwell can keep you informed.

Please don't hesitate to contact me if you require any further information.

Yours sincerely

Tarong Power Stations Site Manager (Acting)

Enquiries: [Redacted]