**Guidelines for Owner Completion of the**

**Emergency Action Plan (EAP) Template**

* Replace all highlighted text (including MAGENTA, BLUE and GREY) with appropriate names, descriptions, or phone numbers. Once the document is final, please remove all highlighting.
* Assistance is available from your local Emergency Management Director for the items in the template designated in GREY. A list of county Emergency Managers is available at <https://ncema.renci.org/Lists/County%20EMs/AllItems.aspx>. Contact them to ensure that all addresses and contacts are current, and that they have not delegated implementation of Emergency Action Plans in your area to a local program.
* If you need assistance in completing portions of this template highlighted in BLUE, file information may be obtained from the Division of Land Resources at (919) 707-9220.
* Appendix A, Simplified inundation maps ([SIMS](file:///C:\Users\TIdol\AppData\Tami\AppData\Roaming\Microsoft\Word\SIMSFactSheet.pdf)) for emergency action plans may be considered for two cases:

1. A small or medium size dam with an easily-identified number of downstream structures for which evacuation procedures can be established by local emergency management.
2. A small or medium size dam for which funding is not immediately available for engineering studies and photo-based mapping is to be used in the interim until such funding can be arranged and the mapping updated.

Guidance for developing simplified inundation maps for emergency action plans may be obtained from the Association of Dam Safety Officials Website at <http://www.damsafety.org> under the “Emergency Action Planning for Owners” header.

Please note SIMS are not a substitute for engineering judgment nor do they alleviate the need to comply with the Dam Safety Act of 1967. SIMS are not to be used for classifying hazard potential or establishing design floods.

* More detailed surveying or modeling may be warranted for large dams or those dams with a large population in the inundation area or unusually complex topography.
* The North Carolina Dam Safety Program is in the process of updating EAP shell documents and guidance. Please check our web site often for updates: <http://portal.ncdenr.org/web/lr/dams>

|  |  |
| --- | --- |
| When completed, submit 2 hard copies  (or electronically) to | North Carolina Dam Safety Program  Division of Land Resources  Land Quality Section  1612 Mail Service Center  Raleigh, North Carolina 27699-1612  Phone: (919) 707-9220  Call for electronic address |

**Dam Name**

**Emergency Action Plan (EAP)**

**State ID: (first 5 letters of County) COUNT-\*\*\***

**County Name County, North Carolina**

Revision Number\_\_\_

Month and Year

*Owner/Operator Information:*

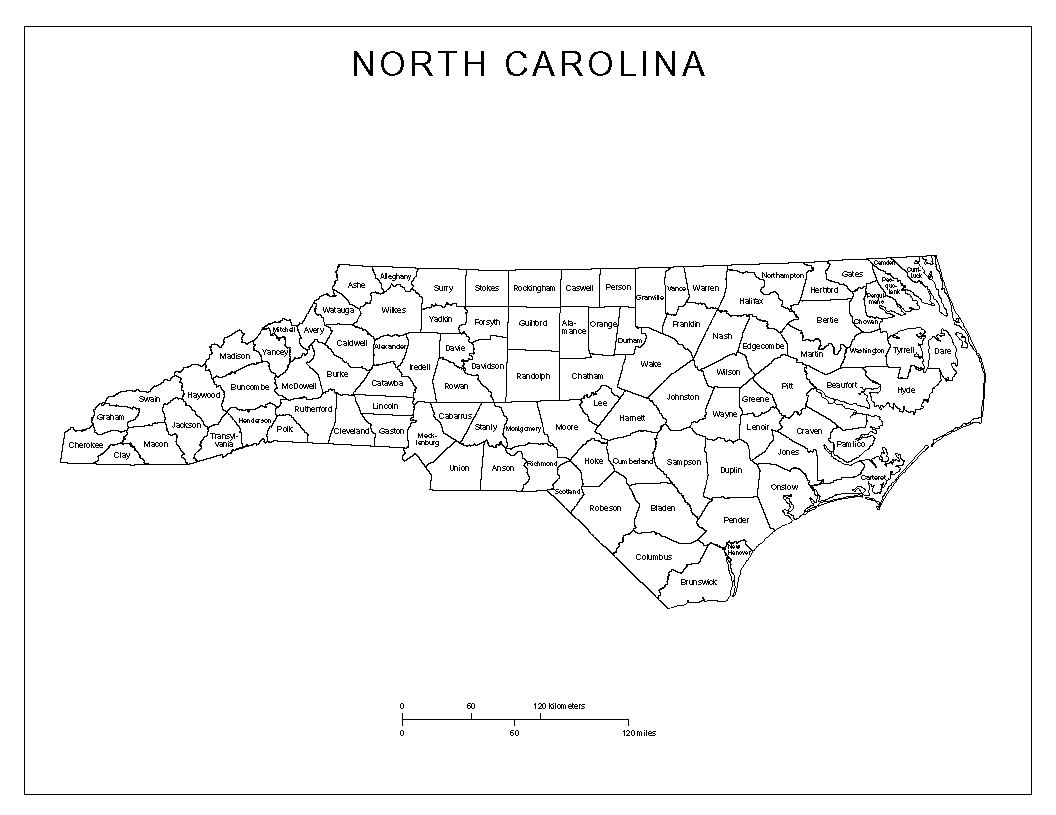
*Name and Title*

*Address*

Day Phone: Insert Day Phone #

Other Phone: Insert Emergency Phone #





Insert Vicinity map here or draw map showing neighboring towns, major roads and location of your dam. Color in your county on the North Carolina map to the left.

Highlight this text

Click on “Insert Picture”

Choose map to insert

# TOC (Table of Contents side tab inserted)

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**Emergency Action Plan**

**XXX Dam**

**State Inventory No: XXXXX-\*\*\***

**Preliminary Pages**

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Summary of EAP Process 2

Statement of Purpose 2

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1.2 Emergency Level Definitions

1.3 Event Level Determination Guidance and Action Data Sheet Index

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2.2 **Level 2, YELLOW Emergency - Potential dam failure situation, rapidly developing**

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Figure 5.3 Map of Hazards Downstream

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Form 3.2 Unusual or Emergency Event Log

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Appendix B Emergency Services Contacts

Appendix C Locally Available Resources (Equipment, Labor, and Materials)

Appendix D Record of EAP Annual Review, Revision and Periodic Test

Appendix E Record of Revisions and Updates

Appendix F EAP Distribution and Acceptance

Appendix G Engineering Documents

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**SUMMARY OF EAP PROCESS**

There are four steps that must be followed anytime an unusual or emergency event is detected at *Dam Name*. The steps are:

**Step 1 - Event Detection and Level Determination**

During the initial step, an unusual event or emergency event is detected at the dam and classified by the *(EAP Coordinator or designee)* into one of the following event levels (reference Table 1.3):

Event Level 3, GREEN: Unusual Event, slowly developing

Event Level 2, YELLOW: Emergency Event, potential dam failure situation, rapidly developing

Event Level 1, RED: Urgent!! Emergency Event, Dam failure imminent or is in progress

**Step 2 - Notification and Communication**

After the event level has been determined, notifications are made in accordance with the appropriate notification flow chart provided in STEP 2 of this EAP.

**Step 3 - Expected Actions**

After the initial notifications are made, *EAP Coordinator or* designee should refer to Table 1.3 and confer with *Engineering Director or designee* to develop and execute appropriate preventative actions. During this step of the EAP, there is a continuous process of taking actions, assessing the status of the situations, and keeping others informed through communication channels established during the initial notifications. The EAP may go through multiple event levels during Steps 2 and 3 as the situation either improves or worsens.

**Step 4 - Termination and Follow-up**

# Once the event has ended or been resolved, termination and follow-up procedures should be followed as outlined in Section 4 of this EAP. EAP operations can only be terminated after completing operations under Event Level 3 or 1. If Event Level 2 is declared, the operations must be designated Event Level 3 or 1 before terminating the EAP operations.

# STATEMENT OF PURPOSE

The purpose of this plan is to prescribe procedures to be followed in the event of an emergency associated with the Dam Name which is caused by an unusually large flood or earthquake, a malfunction (hydraulic or structural) of the spillway, malicious human activity such as sabotage, vandalism or terrorism, or failure of the dam.

This Emergency Action Plan (EAP) defines responsibilities and procedures to:

* Identify unusual and unlikely conditions that may endanger the dam.
* Initiate remedial actions to prevent a dam failure or minimize the downstream impacts of a dam failure.
* Initiate emergency actions to warn downstream residents of impending or actual failure of the dam.

# STEP 1 (DETECTION and EVENT LEVEL DETERMINATION side tab inserted)

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# STEP 1: EVENT DETECTION AND LEVEL DETERMINATION

**1.1 Event Detection**

Daily surveillance, observation and/or instrumentation readings at the site will be the normal methods of detecting potential emergency situations. Unusual or emergency events may be detected by:

• Observations at or near the dam

• Evaluation of instrumentation data

• Earthquakes felt or reported in the vicinity of the dam

• Forewarning of conditions that may cause an unusual event or emergency event at the dam (for example, a severe weather or flash flood forecast)

1.2 Emergency Level Definitions

Level 1, RED Emergency – Urgent!! Dam failure imminent or is in progress

This is an extremely urgent situation when a dam failure is occurring or obviously is about to occur and cannot be prevented. When it is determined that there is no longer time available to implement corrective measures to prevent failure, an order for evacuation of residents in potential inundation areas shall be issued by Emergency Responder (Incident Commander)

Level 2, YELLOW Emergency - Potential dam failure situation, rapidly developing

This classification indicates that a situation is developing that could lead to dam failure, but there is not an immediate threat of dam failure. The dam Owner/Operator should closely monitor the condition of the dam and periodically report the status of the situation. A reasonable amount of time is available for analysis before deciding on evacuation of residents. If the dam condition worsens and failure becomes imminent, the Incident Commander must be notified immediately of the change in the emergency level to evacuate the people at risk downstream.

If time permits, the Owner’s Engineer and state dam safety officials should be contacted to evaluate the situation and recommend remedial actions to prevent failure of the dam. The dam operator should initiate remedial repairs (note local resources that may be available—see Appendix C). Time available to employ remedial actions may be hours or days.

Level 3, GREEN Unusual Event - Slowly developing

This classification indicates a situation is developing, but has not yet threatened the operation or structural integrity of the dam. The Owner’s technical representative or engineer AND NC Dam Safety Office should be contacted to investigate the situation and recommend actions to take. The condition of the dam should be closely monitored, especially during storm events, to detect any development of a potential or imminent dam failure situation.

See the following pages for guidance in determining the proper emergency level for various situations.

# EMERGENCY LEVELS top tab inserted

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**Table 1.3**

**Emergency Level Determination & Action Data Sheet Index**

|  |  |  |  |
| --- | --- | --- | --- |
| **Event** | **Condition** | **Emergency level\*** | **Action Data Sheet** |
| Unexpected Failure | Dam unexpectedly and without warning begins to fail | 1 | #1 |
| Earth spillway flow | Reservoir water surface elevation at auxiliary spillway crest or spillway is flowing with no active erosion | 3 | A3 |
| Spillway flowing with active gully erosion or flow that could result in flooding of people downstream if the reservoir level continues to rise | 2 | A2 |
| Spillway flowing with an advancing head cut that is threatening the control section or that is already flooding people downstream | 1 | A1 |
| Embankment overtopping | Reservoir level is 1 foot below the top of the dam | 2 | B2 |
| Water from the reservoir is flowing over the top of the dam | 1 | B1 |
| Seepage | New seepage areas in or near the dam, water flowing clear | 3 | C3 |
| New seepage areas with cloudy discharge or increasing flow rate | 2 | C2 |
| Seepage with discharge greater than 10 gallons per minute | 1 | C1 |
| Sinkholes | Observation of new sinkhole in reservoir area or on embankment | 2 | D2 |
| Rapidly enlarging sinkhole | 1 | D1 |
| Embankment cracking | New cracks in the embankment greater than ¼-inch wide without seepage | 3 | E3 |
| Embankment movement | Visual movement/slippage of the embankment slope | 2 | F2 |
| Sudden or rapidly proceeding slides of the embankment slopes | 1 | F1 |
| Instruments | Instrumentation readings beyond predetermined values | 3 | G3 |
| Earthquake | Measurable earthquake felt or reported near the dam and dam appears to be stable | 3 | H3 |
| Earthquake resulting in visible damage to the dam or appurtenances | 1 | H1 |
| Security threat | Reported bomb threat, Unverified | 3 | I3 |
| Verified bomb threat that, if carried out, could result in damage to the dam Damage to dam or appurtenances with no impacts to the functioning of the dam | 2 | I2 |
| Detonated bomb that has resulted in damage to the dam or appurtenances | 1 | I1  I1 |
| Suspected Cyber attack of pertinent control systems Include if publically owned (reference General question # 3.) | 1 |  |
| Sabotage/ vandalism | Damage to or modification to the dam or appurtenances no impacts the functioning of the dam | 3 | J3 |
| Damage to dam or appurtenances that has resulted in seepage flow | 2 | J2 |
| Damage to dam or appurtenances that has resulted in uncontrolled water release | 1 | #1 |
| Blocked Culverts | Debris is blocking a spillway pipe, causing lake level to rise | 3 | K3 |

If an event is not covered, adapt an Action Data Sheet of a similar event and event level. If resources described in the Action Data Sheets are not available, adapt with the available resources.

Remove “event” completely if not relevant to the dam.

After the *EAP Coordinator* has determined the event level

*See STEP 2:* GREEN, YELLOW & RED Notification flowcharts the *STEP 3* Referenced **Action Data Sheet**

See STEP 3: Expected Action Data Sheets for specific actions once Emergency Level determined

# STEP 2 (Notifications and Communication side tab inserted)

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Figure 2.1

UNUSUAL

EVENT

LEVEL

3

GREEN

UNUSUAL EVENT, SLOWLY DEVELOPING

(Can usually wait until regular business hours unless Level is elevated)

**State Emergency Operations**

**Center**

**24 hours**

**1-800-858-0368**

**NCDENR, Division of Energy, Mineral, and Land Resources/**

**Land Quality Section Staff**

**BUSINESS HOURS**

### Regional Office

Phone:###-###-####

Or

Raleigh Central Office

Phone: 919-707-9220

**Note:**

(1), (2) denotes suggested call sequence

**Dam Owner/Operator**

**Name**

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Home)

XXX-XXX-XXXX (Cell)

**Dam Owner’s Engineer**

**(if applicable)**

*Name of engineer*

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Home)

XXX-XXX-XXXX (Cell)

**SUGGESTED PHONE MESSAGE**

* This is Identify yourself, name, position.
* An unusual event has been detected at *Dam Name*
* The EAP has been activated, currently at Level 3.
* If a problem occurs, flooding along *Name of Stream* is possible.
* The situation is being monitored to determine if any evacuation warnings will be necessary.
* We will keep you apprised of the situation.
* I can be contacted at the following number Phone No. If you cannot reach me. Please call the following alternative number Alt. No.

(1)

(2)

Figure 2.2

EMERGENCY LEVEL

2

YELLOW

Emergency Level 2 YELLOW Notifications

Potential dam failure situation, rapidly developing

NC Dam Safety

NCDENR

Division of Energy, Mineral, and Land Resources

(3.)

(2.)

(1.)

SERT partners as needed

See *Emergency Services Contacts* (Appendix B) for additional SERT contacts and other emergency personnel.

(2.)

(1.)

State Emergency Operations

Center

24 hours

**1-800-858-0368**

**Be ready to provide information from Figure 5.4 and directions to the dam.**

(1.)

(2.)

Local Responder / Incident Commander

Name of first responder likely dispatched by 911

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Cell)

County Emergency Management Director

Name of EM Director

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Cell)

(3.)

**911 Dispatch**

**Dam Operator’s**

**Engineer**

Name of engineer

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Cell)

**SUGGESTED PHONE MESSAGE**

* This is Identify yourself, name, position.
* I am making this call in accordance with the *Dam Name* Emergency Action Plan
* We have an emergency condition at *Dam Name*
* The EAP has been activated, currently under Emergency Level 2.
* We are implementing predetermined actions to respond to a rapidly developing situation that could result in dam failure.
* The situation is being monitored to determine if any evacuation warnings will be necessary.
* Reference your copy of the EAP to prepare for possible evacuations.
* I can be contacted at the following number Phone No. If you cannot reach me. Please call the following alternative number Alt. No.

**Dam Owner/Operator**

**Name of Dam Owner**

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Home)

XXX-XXX-XXXX (Cell)

**Be ready to provide information from Figure 5.4 and directions to the dam.**

Figure 2.3

EMERGENCY LEVEL

1

RED

Emergency Level 1, RED Notifications

FAILURE IN PROGRESS

(3.)

(2.)

(2.)

(1.)

(1.)

SERT partners as needed

See *Emergency Services Contacts* (Appendix B) for additional SERT contacts and other emergency personnel.

NC Dam Safety

NCDENR

Division of Energy, Mineral, and Land Resources

(2.)

(1.)

**State Emergency Operations Center (Available 24 hours)**

**Phone: 1-800-858-0368**

**Assistance is requested from NCDENR – Dam Safety**

**Be ready to provide information from Figure 5.4 and directions to the dam.**

County Emergency Management Director

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Cell)

Local Responder / Incident Commander

Name of first responder likely dispatched by 911

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Cell)

**911 Dispatch**

**Note:**

1., 2., etc., denotes call sequence

**SUGGESTED PHONE MESSAGE**

* This is an EMERGENCY. This is Identify yourself, name, position.
* *The Dam Name is failing. The downstream area must be evacuated immediately. Repeat, the Dam Name is failing.*
* *We have activated the Emergency Action Plan for this dam and are currently under Emergency Level 1.*
* *Evacuate immediately according to the evacuation map in your copy of the Emergency Action Plan.*
* I can be contacted at the following number Phone No. If you cannot reach me. Please call the following alternative number Alt. No.

**Dam Owner/Operator**

**Insert Name Here**

XXX-XXX-XXXX (Office)

XXX-XXX-XXXX (Home)

XXX-XXX-XXXX (Cell)

# STEP 3 (Expected Actions side tab inserted)

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Step 3: Expected Actions

This Section includes Action Sheets and Emergency Event Logs to be used during and after an emergency situation.

3.1 Action Data Sheets

The Action Data Sheets are to be used as guidance during an emergency event. If an event is not included in Table 1.3, it is recommended to adopt an Action Data Sheet from a similar event and event level. Table 1.3 shows the Action Data Sheet Index to be used according to the Event and the Emergency Level. The Action Data Sheet should reviewed by the Owner’s Engineer when possible and time permits.

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 1, RED UNEXPECTED FAILURE | | | Sheet  #1 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate.  Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **EVALUATION / DECISION based upon TABLE 1.3** | | | |
| Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:   1. The event warrants downgrade if there is no longer an impending threat of dam failure with no additional rainfall occurring YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. Event may be Terminated only when either:  * There is no longer an impending threat of dam failure with no additional rainfall occurring and it has been determined by NC Dam Safety staff safe to impound water or; * The dam has failed AND there is no longer a threat to the downstream public   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) TERMINATION** |  | |
| Monitor conditions until damage is repaired | Go to **Termination and Follow- up** (STEP4) |  | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 3, GREEN EARTH SPILLWAY FLOW “spillway is flowing with no active erosion”  (Link to Table 1.3 Level GREEN “Conditions”). | | | Sheet  A3 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator* (May be split responsibilities, i.e. One person at the dam handling on site actions and a different person who can make notifications. APPLICABLE TO ALL ACTION DATA SHEETS):   1. Make sure Level 3 GREEN notifications in STEP 2 have been made. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and spillway area for erosion every two hours. 3. Monitor Off-site areas “and instrumentation” If Question #3 = YES (Applicable to all Action Data Sheets with reference to Instrumentation). 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 5. Contact the *Owner’s Engineer* at least daily to report the latest observations and conditions. If conditions change significantly, go to **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least daily, or whenever conditions change significantly. **Using Table 1.3**, determine whether:   1. The event can be terminated when spillway flows cease. 2. The event remains at the current Event Level 3 (No change in situation). 3. The event warrants escalation when spillway flows produce active erosion of channel or spillway flow that may result in flooding of people downstream if water continues to rise (Link to Table 1.3 Level Yellow “Conditions”).   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) TERMINATION** | **B) EVENT LEVEL 3 (NO CHANGE)** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Termination and Follow-**  **up** (Step 4) | Continue recommended actions on this sheet | Go to **Event Level 2 or Event Level 1 Steps 2&3** | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 2, YELLOW EARTH SPILLWAY FLOW “Spillway flowing with active gully erosion or possible flooding of people downstream”  (Link to Table 1.3 Level Yellow “Conditions”). | | | Sheet  A2 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 2 YELLOW notifications in STEP 1 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Stay clear of water flows as they are very dangerous. 3. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 4. Monitor water levels and erosion of spillway every 2 hours for changes. Monitor Off-site areas and instrumentation \*If Question #3 = YES 5. Using “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream. (Reference General Question #2) 6. Contact the *Owner’s Engineer* at least daily to report the latest observations and conditions. If conditions change significantly, go to **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least twice daily, or whenever conditions change significantly. **Using Table 1.3**, determine if:   1. The event warrants downgrade to Event Level 3 if “Spillway flows are decreasing with no additional rainfall occurring” (Link to Table 1.3 Level GREEN “Conditions”). All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. 2. The event remains at the current Event Level 2 (*No change in situation*). 3. The event warrants escalation to Event Level 1 If Erosion of channel advancing toward the reservoir or flow is flooding people downstream (Link to Table 1.3 Level Red “Conditions”).   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT LEVEL 2 (NO CHANGE)** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Event Level 3 Steps 2&3** | Continue recommended actions on this sheet | **Event Level 1 RED Steps 2&3** | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 1, RED EARTH SPILLWAY FLOW “Spillway flowing with an advancing headcut that is threatening the control section, or that is flooding people downstream” (Link to Table 1.3 Level RED “Conditions”) | | | Sheet  A1 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate.  Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **EVALUATION / DECISION based upon TABLE 1.3** | | | |
| Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:   1. The event warrants downgrade if spillway flows have stopped with no additional rainfall occurring YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. The event remains at the current Event Level 1 (*No change in situation*). 3. Event may be Terminated only when either:  * Spillway flows have stopped with no additional rainfall occurring and it has been determined by NC Dam Safety staff safe to impound water or; * The dam has failed AND there is no longer a threat to the downstream public   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT/LEVEL RAMAINS THE SAME** | **C) TERMINATION** | |
| Monitor conditions until damage is repaired | Continue recommended actions on this sheet | Go to **Termination and Follow- up** (STEP4) | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 2, YELLOW EMBANKMENT OVERTOPPING “Reservoir is 1 foot below the top of dam”  (Link to Table 1.3 Level Yellow “Conditions”). | | | Sheet  B2 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 2 YELLOW notifications in STEP 1 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Stay clear of water flows as they are very dangerous. 3. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 4. Monitor water levels and erosion of spillway every 2 hours for changes. Monitor Off-site areas and instrumentation (If Question #3 = YES) 5. Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream. (Reference General Question #2) 6. Contact the *Owner’s Engineer* at least twice daily to report the latest observations and conditions. If conditions change significantly, go to **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff   1. Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3, determine whether:   1. The event warrants downgrade to Event Level 3 if precipitation has stopped, slowing additional inflow to lake. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. 2. The event remains at the current Event Level 2 (No change in situation) 3. The event warrants escalation to Event Level 1 if water begins to overtop the embankment.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT LEVEL 2 (NO CHANGE)** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Event Level 3 Steps 2&3** | Continue recommended actions on this sheet | **Event Level 1 RED Steps 2&3** | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 1, RED EMBANKMENT OVERTOPPING “Water from the reservoir is flowing over the top of the dam” (Link to Table 1.3 Level Yellow “Conditions”). | | | Sheet  B1 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Well vegetated embankment dams can withstand overtopping for a short amount of time. Monitor for changes in water flow as signs of the embankment eroding. 4. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 5. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate.  Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **EVALUATION / DECISION Based upon TALE 1.3** | | | |
| *Evaluate the situation as events progress, or whenever conditions change. Determine whether:*   1. *The event warrants downgrade if spillway flows have stopped with no additional rainfall occurring YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3.All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3.* 2. *The event remains at the current Event Level 1 (No change in situation).* 3. *Event may be Terminated only when either:*  * *Spillway flows have stopped with no additional rainfall occurring and it has been determined by NC Dam Safety staff safe to impound water or;* * *The dam has failed AND there is no longer a threat to the downstream public*   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT/LEVEL RAMAINS THE SAME** | **C) TERMINATION** | |
| Monitor conditions until damage is repaired | Continue recommended actions on this sheet | **Go to Termination and Follow- up (STEP4)** | |

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| LEVEL: 3, GREEN SEEPAGE “New seepage areas in or near the dam, water flowing clear” (reference Table 1.3 Level GREEN “Condition”) | | | Sheet  C3 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 3 GREEN notifications in STEP 2 have been made. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and seepage points for cloudy discharge or increased flow rates every two hours. 3. If conditions permit:  * If the inflow source of the seepage is within the reservoir, plug the flow with available material – hay bayles, bentonite, or plastic sheeting * Place an inverted filter (layered sand and gravel) over the exit area to hold soil material in place. * Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream. (Reference General Question #2)  1. Monitor Off-site areas “and instrumentation” If Question #3 = YES (Applicable to all Action Data Sheets with reference to Instrumentation). 2. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 3. Contact the *Owner’s Engineer* at least daily to report the latest observations and conditions. If conditions change significantly, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3, determine whether:   1. The event can be terminated if seepage flow has been remedied and it has been determined by NC Dam Safety staff safe to impound water. 2. The event remains at the current Event Level 3 (No change in situation). 3. The event warrants escalation to Event Level determined using Table 1.3 if discharge becomes cloudy or increased flow rate.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) TERMINATION** | **B) EVENT LEVEL 3 (NO CHANGE)** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Termination and Follow-**  **up** (Step 4) | Continue recommended actions on this sheet | Go to **Event Level 2 or Event Level 1 Steps 2&3** | |

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| LEVEL: 2, YELLOW SEEPAGE “New seepage areas with cloudy discharge or increasing flow rate” (reference Table 1.3 Level YELLOW “Condition”) | | | Sheet  C2 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure notifications on Figure 2.2 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and seepage points for cloudy discharge or increased flow rates every two hours. 3. If conditions permit:  * If the inflow source of the seepage is within the reservoir, plug the flow with available material – hay bayles, bentonite, or plastic sheeting * Place an inverted filter (layered sand and gravel) over the exit area to hold soil material in place.  1. Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream. (Reference General Question #2) 2. Monitor Off-site areas “and instrumentation” If Question #3 = YES (Applicable to all Action Data Sheets with reference to Instrumentation). 3. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 4. Contact the *Owner’s Engineer* at least twice daily to report the latest observations and conditions. If conditions change significantly, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3, determine whether:   1. The event warrants downgrade to Event Level 3 If water level in lake is lowered below level of seepage. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. The event remains at the current Event Level 2 if no change in condition. 3. The event warrants escalation to Event Level 1 if the integrity of the dam appears to be threatened.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT LEVEL 2 (NO CHANGE)** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Event Level 3 Steps 2&3** | Continue recommended actions on this sheet | **Event Level 1 RED Steps 2&3** | |

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| LEVEL: 1, RED SEEPAGE *”Seepage with discharge greater than 10 gallons per minute” (reference Table 1.3 Level RED “Condition”)* | | | Sheet  C1 | |
| **RECOMMENDED ACTIONS** | | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Well vegetated embankment dams can withstand overtopping for a short amount of time. Monitor for changes in water flow as signs of the embankment eroding. 4. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 5. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate.  Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | | |
| **EVALUATION / DECISION Based upon TALE 1.3** | | | | |
| *Evaluate the situation as events progress, or whenever conditions change. Determine whether:*   1. *The event warrants downgrade if seepage stopped AND water level in lake is lowered below level of seepage YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3.* 2. *The event remains at the current Event Level 1 (No change in situation).* 3. *Event may be Terminated only when either:*  * *The dam has failed AND there is no longer a threat to the downstream public and determined by NC Dam Safety staff safe to impound water*   *All contacts on Notification Flow Chart shall be updated of changes* | | | | |
| Based on this determination, follow the appropriate actions | | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT/LEVEL RAMAINS THE SAME** | **C) TERMINATION** | | |
| Monitor conditions until damage is repaired | Continue recommended actions on this sheet | **Go to Termination and Follow- up (STEP4)** | | |

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| LEVEL: 2, YELLOW SINKHOLES “Observation of new sinkhole in reservoir area or on embankment” (reference Table 1.3 Level YELLOW “Condition”) | | | Sheet  D2 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure notifications on Figure 2.2 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and change in diameter or depth of sinkhole every two hours. 3. If conditions permit: 4. If the inflow source of the seepage is within the reservoir, plug the flow with available material – hay bayles, bentonite, or plastic sheeting 5. Place an inverted filter (layered sand and gravel) over the exit area of soil loss to hold soil material in place. 6. Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level until below bottom of sinkhole. Caution must be taken to not add additional flooding to properties downstream. (Reference General Question #2) 7. Monitor Off-site areas “and instrumentation” If Question #3 = YES (Applicable to all Action Data Sheets with reference to Instrumentation). 8. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 9. Contact the *Owner’s Engineer* at least twice daily to report the latest observations and conditions. If conditions change significantly, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3, determine whether:   1. The event warrants downgrade to Event Level 3 If water level in lake is lowered below bottom level of sinkhole. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. The event remains at the current Event Level 2 if no change in condition. 3. The event warrants escalation to Event Level 1 if the sinkhole enlarges or new sinkholes begin to form   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT LEVEL 2 (NO CHANGE)** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Event Level 3 Steps 2&3** | Continue recommended actions on this sheet | **Event Level 1 RED Steps 2&3** | |

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| LEVEL: 1, RED SINKHOLES “Rapidly enlarging sinkhole or new sinkholes forming” (reference Table 1.3 “Level RED “Condition”) | | | Sheet  D1 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **EVALUATION / DECISION based upon TABLE 1.3** | | | |
| Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:   1. The event warrants downgrade if there is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of sinkhole YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. Event may be Terminated only when either:  * There is no longer an impending threat of dam failure with no additional rainfall occurring and it has been determined by NC Dam Safety staff safe to impound water or; * The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) TERMINATION** |  | |
| Monitor conditions until damage is repaired | Go to **Termination and Follow- up** (STEP4) |  | |

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| LEVEL: 3, GREEN *EMBANKMENT CRACKING*  “New cracks in the embankment greater than ¼-inch wide without seepage” (reference Table 1.3 Level GREEN “Condition”) | | | Sheet  E3 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 3 GREEN notifications in STEP 2 have been made. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and crack widths for movement or seepage daily. 3. Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level to relieve pressure on the embankment. Caution must be taken to not add additional flooding to properties downstream. (Reference General Question #2) 4. Monitor Off-site areas “and instrumentation” If Question #3 = YES (Applicable to all Action Data Sheets with reference to Instrumentation). 5. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 6. Contact the *Owner’s Engineer* at least daily to report the latest observations and conditions. If conditions change significantly, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3, determine whether:   1. The event can be terminated if the dam if determined to no longer pose an immediate threat to downstream by NC Dam Safety staff. 2. The event remains at the current Event Level 3 (No change in situation). 3. The event warrants escalation, determined using Table 1.3 if cracks enlarging or water begins to flow from cracks.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) TERMINATION** | **B) EVENT LEVEL 3 (NO CHANGE)** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Termination and Follow-**  **up** (Step 4) | Continue recommended actions on this sheet | Go to **Event Level 2 or Event Level 1 Steps 2&3** | |

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| LEVEL: 2, YELLOW EMBANKMENT MOVEMENT “Visual movement/slippage of the embankment slope” (reference Table 1.3 Level YELLOW “Condition”) | | | Sheet  F2 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure notifications on Figure 2.2 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and development of new cracks or movement every two hours. 3. If conditions permit:  * Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream. (Reference General Question #2) * Stabilize slides on the downstream slope by weighting the toe area below the slide with additional soil, rock or gravel.  1. Monitor Off-site areas “and instrumentation” If Question #3 = YES (Applicable to all Action Data Sheets with reference to Instrumentation). 2. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 3. Contact the *Owner’s Engineer* at least twice daily to report the latest observations and conditions. If conditions change significantly, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3, determine whether:   1. The event warrants downgrade to Event Level 3 If water level in lake is lowered below level of dam embankment. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. Event may not be terminated until repairs are made according to NC regulations. 2. The event remains at the current Event Level 2 if no change in condition. 3. The event warrants escalation to Event Level 1 if the integrity of the dam appears to be threatened by sudden or rapidly proceeding slides.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT LEVEL 2 (NO CHANGE)** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Event Level 3 Steps 2&3** | Continue recommended actions on this sheet | **Event Level 1 RED Steps 2&3** | |

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| LEVEL: 2, RED EMBANKMENT MOVEMENT “sudden or rapidly proceeding slides of the embankment slopes” (reference Table 1.3 Level RED “Condition”) | | | Sheet  F1 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **EVALUATION / DECISION based upon TABLE 1.3** | | | |
| Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:   1. The event warrants downgrade if there is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of embankment fill YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. Event may be Terminated only when either:  * The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) TERMINATION** |  | |
| Monitor conditions until damage is repaired | Go to **Termination and Follow- up** (STEP4) |  | |

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| LEVEL: 3, GREEN INSTRUMENTS ”Instrumentation readings beyond predetermined values” (reference Table 1.3 Level GREEN “Condition”) | | | Sheet  G3 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 3 GREEN notifications in STEP 2 have been made. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and instrument readings for changes or anomalies. 3. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 4. Contact the *Owner’s Engineer* at least daily to report the latest observations and conditions. 5. If instrumentation readings at the dam are determined to indicate a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3, determine whether:   1. The event can be terminated if instrumentation readings back to normal or if instrument reading determined to be invalid. 2. The event remains at the current Event Level 3 (No change in situation). 3. The event warrants escalation, determined using Table 1.3 if instrumentation readings at the dam are determined to indicate a potentially dangerous situation.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) TERMINATION** | **B) EVENT/LEVEL REMAINS THE SAME** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Termination and Follow- up** (Section 4) | Continue recommended actions on this sheet | Go to **Event Level 2 or Event Level 1 Steps 2&3** | |

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| LEVEL: 3, GREEN EARTHQUAKE “Measurable earthquake felt or reported and dam appears to be stable” (reference Table 1.3 Level 3 GREEN “Condition”) | | | Sheet  H3 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 3 GREEN notifications in STEP 2 have been made. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. 3. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 4. Be prepared for additional aftershocks. 5. Contact the *Owner’s Engineer* to report the latest observations and conditions. 6. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:   1. The event can be terminated if the dam is determined to be stable and a sufficient amount of time has passed when additional aftershocks are not expected. 2. The event remains at the current Event Level 3 until complete inspection has determined the dam to be stable. 3. The event warrants escalation if inspection has determined a potentially dangerous situation.   *All contacts on Notification Flow Chart shall be updated of changes*  Based on this determination, follow the appropriate actions below. | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) TERMINATION** | **B) EVENT/LEVEL REMAINS THE SAME** | **C) EVENT LEVEL ESCALATION** | |
| Recommend Termination of Event to IC. Go to STEP 4 | Continue recommended actions on this sheet | Go to **Event Level 2 or Event Level 1 Steps 2&3** | |

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| LEVEL: 1 RED EARTHQUAKE “Earthquake resulting in visible damage to the dam or appurtenances” (reference Table 1.3 Level RED “Condition”) | | | Sheet  H1 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **EVALUATION / DECISION based upon TABLE 1.3** | | | |
| Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:   1. The event warrants downgrade if There is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of embankment fill YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. Event may be Terminated only when either:  * The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL 1** | **B) TERMINATION** |  | |
| Continue recommended actions on this sheet | Go to **Termination and Follow-**  **up** (Section 4) |  | |

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| LEVEL: 3,GREEN SECURITY THREAT “Unverified bomb threat” (reference Table 1.3 Level GREEN “Condition”) | | | Sheet  I3 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Notify Local Law Enforcement to help evaluate the situation. 2. Access the dam only if area has been cleared by Law Enforcement. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 5. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:  The event can be terminated if the dam is determined to be stable and a sufficient amount of time has passed when additional aftershocks are not expected.  The event warrants escalation if inspection has determined a potentially dangerous situation.  *All contacts on Notification Flow Chart shall be updated of changes*  Based on this determination, follow the appropriate actions below. | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) TERMINATION** | **B) EVENT LEVEL ESCALATION** |  | |
| Recommend Termination of Event to IC. Go to STEP 4 | Go to **Event Level 2 or Event Level 1 Steps 2&3** |  | |

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| LEVEL: 2, YELLOW SECURITY THREAT “Verified bomb threat that, if carried out, could result in damage to the dam or appurtenances with no impacts to the functioning of the dam” (reference Table 1.3 Level YELLOW “Condition”) | | | Sheet  I2 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Notify Local Law Enforcement to help evaluate the situation. 2. Access the dam only if area has been cleared by Law Enforcement. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 5. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:   1. The event warrants downgrade to Event Level 3 if threat removed YET damage to the dam or appurtenances in need of repair. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. The event remains at the current Event Level 2 if threat not yet removed. 3. The event warrants escalation to Event Level 1 if bomb is detonated or has been determined that detonation could cause sudden failure.   *All contacts on Notification Flow Chart shall be updated of changes*  Based on this determination, follow the appropriate actions below. | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT/LEVEL REMAINS THE SAME** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Event Level 3 Steps 2&3** | Continue recommended actions on this sheet | **Event Level 1 RED Steps 2&3** | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 1 RED Security Threat “detonated bomb resulting in visible damage to the dam or appurtenances” (reference Table 1.3 Level RED “Condition”) | | | Sheet  I1 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **EVALUATION / DECISION based upon TABLE 1.3** | | | |
| Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:   1. The event warrants downgrade if there is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of embankment fill YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. Event may be Terminated only when either:  * The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL 1** | **B) TERMINATION** |  | |
| Continue recommended actions on this sheet | Go to **Termination and Follow-**  **up** (Section 4) |  | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 3,GREEN SABOTAGE/VANDALISM “Damage to or modification to the dam or appurtenances with no impacts the functioning of the dam.” (reference Table 1.3 Level GREEN “Condition”) | | | Sheet  J3 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Notify Local Law Enforcement to help evaluate the situation. 2. Make sure Level 3 GREEN notifications in STEP 2 have been made. 3. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 5. Contact the *Owner’s Engineer* to report the latest observations and conditions. 6. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:  The event can be terminated if the dam is determined to be stable and a sufficient amount of time has passed when additional aftershocks are not expected.  The event warrants escalation if inspection has determined a potentially dangerous situation.  *All contacts on Notification Flow Chart shall be updated of changes*  Based on this determination, follow the appropriate actions below. | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) TERMINATION** | **B) EVENT LEVEL ESCALATION** |  | |
| Recommend Termination of Event to IC. Go to STEP 4 | Go to **Event Level 2 or Event Level 1 Steps 2&3** |  | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 2, YELLOW SABOTAGE/VANDALISM “Damage to or modification to the dam or appurtenances that impacts the functioning of the dam” (reference Table 1.3 Level YELLOW “Condition”) | | | Sheet  J2 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Notify Local Law Enforcement to help evaluate the situation. 2. Access the dam only if area has been cleared by Law Enforcement. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 5. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:   1. The event warrants downgrade to Event Level 3 if threat removed YET damage to the dam or appurtenances in need of repair. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. The event remains at the current Event Level 2 if threat not yet removed. 3. The event warrants escalation to Event Level 1 if has been determined that sudden failure may occur.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL DOWNGRADE** | **B) EVENT/LEVEL REMAINS THE SAME** | **C) EVENT LEVEL ESCALATION** | |
| Go to **Event Level 3 Steps 2&3** | Continue recommended actions on this sheet | **Event Level 1 RED Steps 2&3** | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 1 RED SABOTAGE/VANDALISM “Uncontrolled water release” (reference Table 1.3 Level RED “Condition”) | | | Sheet  J1 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam. 3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public. 4. *Record all information, observations, and actions on an Event Log Form (Form 3.2).*   *Owner’s Engineer*  Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise *Owner/EAP Coordinator* of dangerous conditions at the dam.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **EVALUATION / DECISION based upon TABLE 1.3** | | | |
| Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:   1. The event warrants downgrade if there is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of embankment fill YET there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3. 2. Event may be Terminated only when either:  * The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) EVENT LEVEL 1** | **B) TERMINATION** |  | |
| Continue recommended actions on this sheet | Go to **Termination and Follow-**  **up** (Section 4) |  | |

|  |  |  |  |
| --- | --- | --- | --- |
| LEVEL: 3, GREEN BLOCKED CULVERTS / SPILLWAY “Debris is blocking a spillway pipe, causing lake level to rise” (reference Table 1.3 Level GREEN “Condition”) | | | Sheet  K3 |
| **RECOMMENDED ACTIONS** | | | |
| *Owner/EAP Coordinator*   1. Make sure Level 3 GREEN notifications in STEP 2 have been made. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. 3. *Record all information, observations, and actions on an Event Log Form (Form 3.2).* 4. Be prepared for additional aftershocks. 5. Contact the *Owner’s Engineer* to report the latest observations and conditions. 6. If blockage cannot be removed, go to the **re-evaluation/decision section** and follow relevant steps immediately.   *Owner’s Engineer*  Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.  NC Dam Safety Staff  Provide decision support and technical support to the *Incident Commander* as appropriate. | | | |
| **RE-EVALUATION / DECISION Based upon TALE 1.3** | | | |
| Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:   1. The event can be terminated once debris is removed and water level has returned to normal pool. 2. The event remains at the current Event Level 3. No change in severity - water level is not rising. 3. The event warrants escalation according to Table 1.3 if blockage cannot be removed and water level is rising.   *All contacts on Notification Flow Chart shall be updated of changes* | | | |
| Based on this determination, follow the appropriate actions | | | |
| **A) TERMINATION** | **B) EVENT/LEVEL REMAINS THE SAME** | **C) EVENT LEVEL CHANGE** | |
| Go to **Termination and Follow-**  **up** (Section 4) | Continue recommended actions on this sheet | Go to Table 1.3 to Re-Evaluate | |

# FORM 3.2

**Unusual or Emergency Event Log**

(To be completed during the emergency)

Dam name: County:

When and how was the event detected?

Weather conditions:

General description of the emergency situation:

Emergency level determination: Made by:

**Actions and Event Progression**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Time** | **Action/event progression** | **Recorded by** |
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**Actions and Event Progression (continued)**

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| --- | --- | --- | --- |
| **Date** | **Time** | **Action/event progression** | **Recorded by** |
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# STEP 4 (Termination and Follow-up side tab inserted)

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**SECTION 4**

**TERMINATION AND FOLLOW-UP**

Once EAP operations have begun under Event Level 3, 2, or 1, the EAP operations must eventually be terminated and follow-up procedures completed. As shown on Figure i, EAP operations can only be terminated after completing operations under Event Level 3 or 1. If Event Level 2 is declared, the operations must be designated Event Level 3 or 1 before terminating the EAP operations.

**4.1 Termination Responsibilities**

(*Identify the individual responsible for terminating EAP operations. This must not necessarily be the EAP Coordinator. Describe notification protocol to be followed once EAP activities have been terminated.*

*Outline any special actions that are to be taken prior to termination of a Level 1 event that did not result in dam failure. These actions should ensure the safety of people and property downstream. Do not terminate the EAP unless it is certain that there is no further threat.*)

**4.2 Follow-up**

Event Level 3, GREEN – *Describe the EAP review process following the termination of a Level 3 event. Ensure that all parties that participated in the EAP activities are involved in the review process. Impose a time frame within which the review is to be completed. During the review, document any EAP procedures that were followed effectively, as well as any ways that the EAP could be improved, and insert this document into Appendix D of the EAP.*

Event Level 2, YELLOW or Level 1, RED– *Describe the EAP review process following the termination of a Level 2 or 1 event. Ensure that all parties that participated in the EAP activities are involved in the review process. Impose a time frame within which the review is to be completed. During the review, document any EAP procedures that were followed effectively, as well as any ways that the EAP could be improved, and insert this document into Appendix D of the EAP. In addition, note any extra measures that must be taken due to the increased severity of the event.*

Event That Has Caused Loss of Life, Injury or Property Damage – *In addition to the course of action outlined above for Event Level 2 or 1, note any special procedures that must be followed in the event of loss of life, injury or property damage. In general, a closer look should be taken at the EAP operations. As before, impose a reasonable time frame on the completion of these activities, and insert any conclusions into Appendix D of the EAP.*)

MAPS, FIGURES, SUPPORTING DATA side tab inserted

**SECTION 5**

**MAPS, FIGURES AND SUPPORTING DATA**

* Directions and Emergency Access Routes Map (Figure 5.1)
* Residents/Businesses/Roads/Infrastructure at Risk (Table 5)
* Map of Hazards Downstream (Figure 5.2)
* Summary Information about Dam (Figure 5.4)

Include any other maps, charts or figures deemed relevant in the case of an emergency event.

**FIGURE 5.1**

**Directions and Emergency Access Routes Map**

Insert Map showing safe route for responders to access the site of the dam

without crossing danger zone

**Directions to dam from major intersection:**\_\_\_\_\_

People at Risk top tab inserted

Replace Page with divider  **FIGURE 5.2**

**Residents/Businesses/Roads/Infrastructure at Risk**

Brief summary of number of entities within hazard zone.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Entity No.** | **Resident/business/roads**  **or other impacted entity** | **Property Address** | **Phone No. with area code** | **Distance downstream from dam (mi)** |
| X | Name of entity | Address/location of entity | XXX-XXX-XXXX | Distance from dam |
| X | Name of entity | Address/location of entity | XXX | Distance from dam |
| X | Name of entity | Address/location of entity | XXX | Distance from dam |
| X | Name of entity | Address/location of entity | XXX | Distance from dam |
| X | Name of entity | Address/location of entity | XXX | Distance from dam |
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| X | Name of entity | Address/location of entity | XXX | Distance from dam |

(Use additional sheets if necessary)

MAPS top tab inserted

## FIGURE 5.3

## Inundation Study

**Inundation Map vs. Evacuation Area**

**Inundation maps** have been developed from best available information using reasonable assumptions and standardized methods. They are approximations of the maximum water surface extents resulting from a complete dam breach and draining of the full reservoir. Inundation maps are empirical hydrologic and hydraulic simulations that can only be field verified in the event of an actual breach.

**Evacuation areas and call lists** should take into consideration the anticipated local impacts of flooding; knowledge of local infrastructure, both occupancy and ownership; and potentially interrupted services or cut-off access, which would be caused by dam failure. Depending upon actual circumstances, appropriate alert and evacuation areas could be more or less extensive than the simulated inundation zones.

Insert Inundation Maps here

## FIGURE 5.4

**NC Inventory Data**

**Insert side tab for**

**APPENDICESAPPENDIX A**

**Roles and Responsibilities**

**Dam Owner/Operator (NAME)**

• As soon as an unusual or emergency event is observed or reported, immediately determine the emergency level (see Emergency Levels tab).

– Level 1, RED Emergency: Urgent!! Dam failure appears imminent or is in progress

– Level 2, YELLOW Emergency: potential dam failure situation, rapidly developing

– Level 3, GREEN Unusual Event: slowly developing

• Immediately notify the personnel in the order shown on the notification chart for the appropriate level (see Notification Charts tab).

• Provide updates of the situation to the Incident Commander dispatcher to assist them in making timely and accurate decisions regarding warnings and evacuations.

• Provide leadership to assure the EAP is reviewed and updated annually and copies of the revised EAP are distributed to all who received copies of the original EAP.

**EAP Coordinator (May be owner)**

• Owner may designate responsibilities above to an EAP coordinator

**Local Emergency Management (NAME)**

• EAP preparation - Coordinate with local responders and dispatchers to ensure each has an opportunity for input into the EAP and each has a copy and is aware of their responsibilities.

• Assist in determination of who would be the Incident Commander for this dam.

• During an event, maintain communication with NC Dam Safety staff via the State EOC (1-800-858-0368)

• Assist owners in preparation of *Emergency access Routes Map*

• Maintain communication with media when necessary.

• When a Level 2 situation occurs:

– Prepare response personnel for possible evacuations that may be needed if a Level 1 situation occurs.

– Alert the public as appropriate.

• When a Level 1 situation occurs:

– Alert the public.

– Immediately close roads and evacuate people within and possibly adjacent to the inundation area.

• Participate in an annual review and update of the EAP.

**Incident Commander (Local responding agency name)**

• Serve as the primary contact person responsible for coordination of all emergency actions.

• When a Level 2 situation occurs: Prepare responders for possible evacuations that may be needed if a Level 1 situation occurs.

• When a Level 1 situation occurs:

– Initiate warnings and order evacuation of people at risk downstream of the dam.

– Notify local emergency management services to carry out the evacuation of people and close roads within the inundation area

• Decide when to terminate the emergency.

• Participate in an annual review and update of the EAP.

**Dam Operator’s Technical Representatives (Owner’s Engineer)**

• Advise the dam owner/operator of the emergency level determination, if time permits.

• Advise the dam owner/operator of remedial actions to take if Level 2 event occurs, if time permits.

• Assist the dam Owner in preparation of *Action Data Sheets* – Table 3.1

**NC State Dam Safety**

• Advise the Incident Commander of the emergency level determination, if time permits.

• Provide technical and other assistance to the Incident Commander as needed.

• Advise the dam owner/operator of remedial actions to take if Level 2 event occurs, if time permits.

**OTHER RESPONSIBLE PARTIES AS DEFINED**

**APPENDIX B**

**Emergency Services Contacts**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Agency / Organization** | **Principal Contact** | **Address** | **Office Phone No. with Area Code** | **Alternate Telephone Numbers** |
| NC Emergency Operations Center (After hours contact for NC Dam Safety) |  |  | 1-800-858-0368 | N/A |
| Local 911 Call Center |  |  | 911 | XXX-XXX-XXXX |
| County Emergency Management Director | Name of Director | Contact Address | XXX-XXX-XXXX | XXX-XXX-XXXX (C) |
| Owner/Representative of Name of Dam | Name of owner | Contact Address | XXX-XXX-XXXX | XXX-XXX-XXXX (H) XXX-XXX-XXXX (C) |
| XXXX County Sheriff | Sheriff’s Name | Contact Address | XXX-XXX-XXXX | XXX-XXX-XXXX (C) |
| Local Fire Department | Contact Name | Contact Address | XXX-XXX-XXXX | XXX-XXX-XXXX |
| Local Police | Contact Name | Contact Address | XXX-XXX-XXXX | XXX-XXX-XXXX |
| Local Highway Patrol | Contact Name | Contact Address | XXX-XXX-XXXX | XXX-XXX-XXXX |
| North Carolina State Dam Safety Program (NCDENR, Division of Energy, Mineral, and Land Resources) | Any Land Quality – Dam Safety staff |  | Central office  919-707-9220  XXX Regional Office  XXX-XXX-XXXX | NC Emergency Operations Center  1-800-858-0368 |
| National Weather Service |  |  | XXX-XXX-XXXX |  |
| NC Department of Transportation |  |  | XXX-XXX-XXXX | XXX-XXX-XXXX |
| Natural Resources Conservation Service  (For NRCS Dams only) | State Engineer or District Engineer | Contact Address | XXX-XXX-XXXX | XXX-XXX-XXXX (H) XXX-XXX-XXXX (C) |
| Local TV Station | Contact Name | Contact Address | XXX-XXX-XXXX | XXX-XXX-XXXX |
| Local Radio Station XXXX AM or FM | Contact Name | Contact Address | XXX-XXX-XXXX |  |

**APPENDIX C**

**LOCALLY AVAILABLE RESOURCES (EQUIPMENT, LABOR, AND MATERIALS)**

Locally available resources include: (if not available please note)

|  |  |  |
| --- | --- | --- |
| **Heavy Equipment Service and Rental** | **Sand and Gravel Supply** | **Ready-mix Concrete Supply** |
| Name:  Address:  Phone number with area code: | Name:  Address:  Phone number with area code: | Name:  Address:  Phone number with area code: |
| **Pumps** | **Diving Service** | **Sand Bags** |
| Name:  Address:  Phone number with area code: | Name:  Address:  Phone number with area code: | Name:  Address:  Phone number with area code: |

**APPENDIX D**

**EAP REVIEW, REVISION AND PERIODIC TEST**

***It is very imperative this EAP document be reviewed annually and updated to stay current. A periodic test of the EAP procedures is recommended every 5 years.***

**EAP Annual Review**

(*Identify the individual responsible for conducting the annual review of the EAP. Explain in detail the review procedure and all parties involved. Describe what, if any, post-review actions should be taken. Note that an EAP Annual Review Verification Statement should be completed upon conclusion of the review.)*

**EAP Periodic Test**

(*Identify the individual responsible for coordinating the Periodic Test of the EAP. Explain in detail the components of the test and all those expected to participate. Describe any post-test actions and their implications for the EAP.*)

**Revision**

## (*Identify the individual responsible for ensuring that the EAP documents are revised. The EAP held by this individual is the master document. Explain the procedure by which revisions are made, and how to ensure that changes are made in all existing copies of the EAP. Emphasize the necessity that all copies remain updated and identical.*)

**APPENDIX E**

**RECORD OF REVISIONS AND UPDATES**

|  |  |  |
| --- | --- | --- |
| **Revision No.** | **Date** | **Revisions Made** |
| 0 | (Month & Year) | EAP published in NC 2010 format |
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## APPENDIX F

## EAP DISTRIBUTION AND ACCEPTANCE

By my signature, I acknowledge that I, or my representative, have reviewed this plan and concur with the tasks and responsibilities assigned herein for my organization and me.

|  |  |  |
| --- | --- | --- |
| **Copy Number** | **Organization** | **ACCEPTANCE SIGNATURE** |
| 1 | Owner’s name  Address  Phone Nomber  Owner’s E-mail |  |
| 2 | County Emergency Management Contact name  Address  Phone Nomber  Contact E-mail |  |
| 3  And  4 | North Carolina Dam Safety Program  1612 Mail Service Center  Raleigh, North Carolina 27699-1612  (919)707-9220 |  |
| \_\_ | Any Other Stake-Holder in the safety of this dam  Likely responding agency, such as local fire department or law enforcement agency |  |

APPENDIX G

ENGINEERING DOCUMENTS

Engineering Records (if available)

* Reservoir Area – Capacity Curve
* Principal Spillway Rating Curve
* Emergency Spillway (Top of Dam) Rating Curve
* Annotated Site Pictures
* Plan View of the Dam

**Appendix H**

**Glossary**

|  |  |
| --- | --- |
| **Abutment** | The part of the valley side against which the dam is constructed. The left and right abutments of dams are defined with the observer looking downstream from the dam. |
|  |  |
| **Appurtenances** | Structures incident to or annexed to dams essential to the proper operation, maintenance or functioning of the dam. This includes such structures as spillways, low level outlet works and water conduits, such as tunnels, pipelines or penstocks, either through a dam or its abutments. |
|  |  |
| **Breach** | An opening through the dam that allows draining of the reservoir. A controlled breach is an intentionally constructed opening. An uncontrolled breach is an unintended failure of the dam. |
|  |  |
| **Control section** | An usually level segment in the profile of an open channel spillway above which water in the reservoir discharges through the spillway. |
|  |  |
| **Dam** | An artificial barrier generally constructed across a watercourse for the purpose of impounding or diverting water. |
|  |  |
| **Emergency spillway** | The appurtenant structure that provides the controlled conveyance of excess water through, over, or around the dam. |
|  |  |
| **Incident Commander** | (IC) is responsible for directing and/or controlling resources by virtue of explicit legal, agency, or delegated authority. The individual responsible for the overall management of the response is called the Incident Commander. For responses under the National Response System (NRS), the pre-designated On-Scene Coordinator (OSC) generally assumes the role of Incident Commander. |
|  |  |
| **Instrumentation** | An arrangement of devices installed into or near dams that provide measurements to evaluate the structural behavior and other performance parameters of the dam and spillway structures. Examples include seepage measuring weirs, piezometers, inclinometers and survey monuments. |
|  |  |
| **Low level outlet works** | An appurtenant structure, usually consisting of a pipe through the embankment or principal spillway structure equipped with a valve, whose purpose is to allow lowering the lake level. |
|  |  |
| **Principal spillway** | The appurtenant structure that conveys normal inflow through or around the embankment. |
|  |  |
| **Reservoir** | The body of water impounded or potentially impounded by the dam. |
|  |  |
| **Seepage** | The natural movement of water through the embankment, foundation, or abutment of the dam. |
|  |  |
| **SERT** | State Emergency Response Team , Collection of State Agencies, Non-profit and voluntary organizations  which provide support to local government agencies in their response, recovery, preparedness & mitigation of  natural & technological hazard. |
|  |  |
| **Unusual Event** | An event which takes place, or a condition which develops, that is not normally encountered in the routine operation of the dam and reservoir, or necessitates a variation from the operating procedures. |