Meeting Attendees and Agenda

NV Energy Reid Gardner Station Mesa Ponds M5 and M7 and Raw Water Ponds Emergency Action Plans

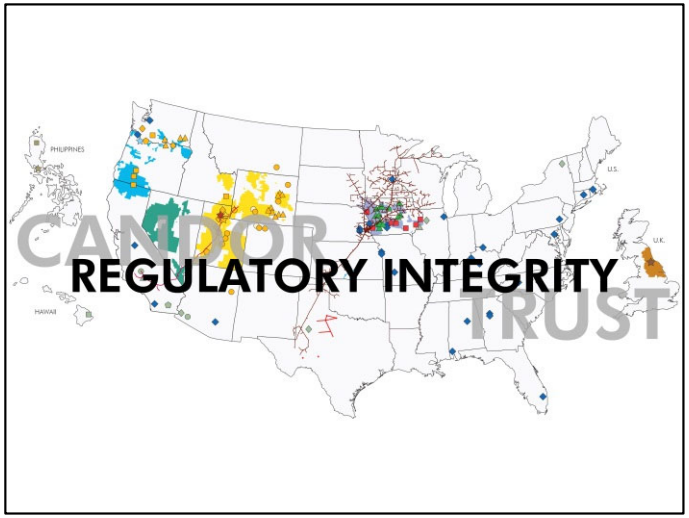
Presented By: Michael Rojo, NV Energy Sr. Project Manager, Site Remediation

Meeting date/Time: April 4, 2023 – 11:00 AM – 12:00 PM

Location: Teleconference via Teams

Invited Attendees:
Solome Barton – City of North Las Vegas – absent
Andria Webster – Clark County – present
Rachel Skidmore – absent
Misty Richardson – Clark County – present
Stephaine Daus – NVE - present
Marcus Dunn- NVE - present
Michael Rojo – NVE - present
Elizabeth Paulson – NVE - present
Katie Nannini – NVE - absent
Jay Piper – Jacobs - absent
Michael Atherall – present
Nathan Betts – Jacobs - absent
Jodi Carl – Las Vegas Metropolitan Police Department – absent
Stephen Neel – Moapa Valley Fire District – absent
Billy Samuels – Clark County – absent
Carlito Rayos – Clark County – absent
Kevin Krencik – NVE – Present
Todd Robison – NVE – Present
Kimberly Ferguson – NVE – absent
Mathew Johns – NVE – absnet
Timothy Hill – NVE – Present
Jay Wiggins – NVE - absent
Ralph Dresel – Jacobs - present
Jason Reed – NVE - present
Eugene Logue – NVE – absent

Agenda:
1. Safety Minute
2. History and Site Update
3. Overview of Emergency Action Plan (EAP)
4. Impacted Area Map – Theoretical
5. Incident Response Process
6. Roles & Responsibilities



Reid Gardner Dam Safety Emergency Action Plan (EAP) Annual Meeting – April 4, 2023

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Reid Gardner Station
EAP Annual Meeting Agenda

1. Safety Minute
2. History and Site Update
3. Overview of Emergency Action Plan (EAP)
4. Impacted Area Map – Theoretical
5. Incident Response Process
6. Roles & Responsibilities

Safety Minute – Teton River Dam Failure June 5, 1976

- Bureau of Reclamation earthen Dam 12 miles NE of Rexburg in SE Idaho
- Controversial, rushed approval.
- Areas of high permeability, rock fissures, and seismic concerns identified during the planning, engineering and construction process
- Construction started February 1972
- Started filling dam November 1975

Safety Minute –
Teton River Dam Failure June 5, 1976

6/5/1976 0730

6/5/1976 0930

6/5/1976 noon

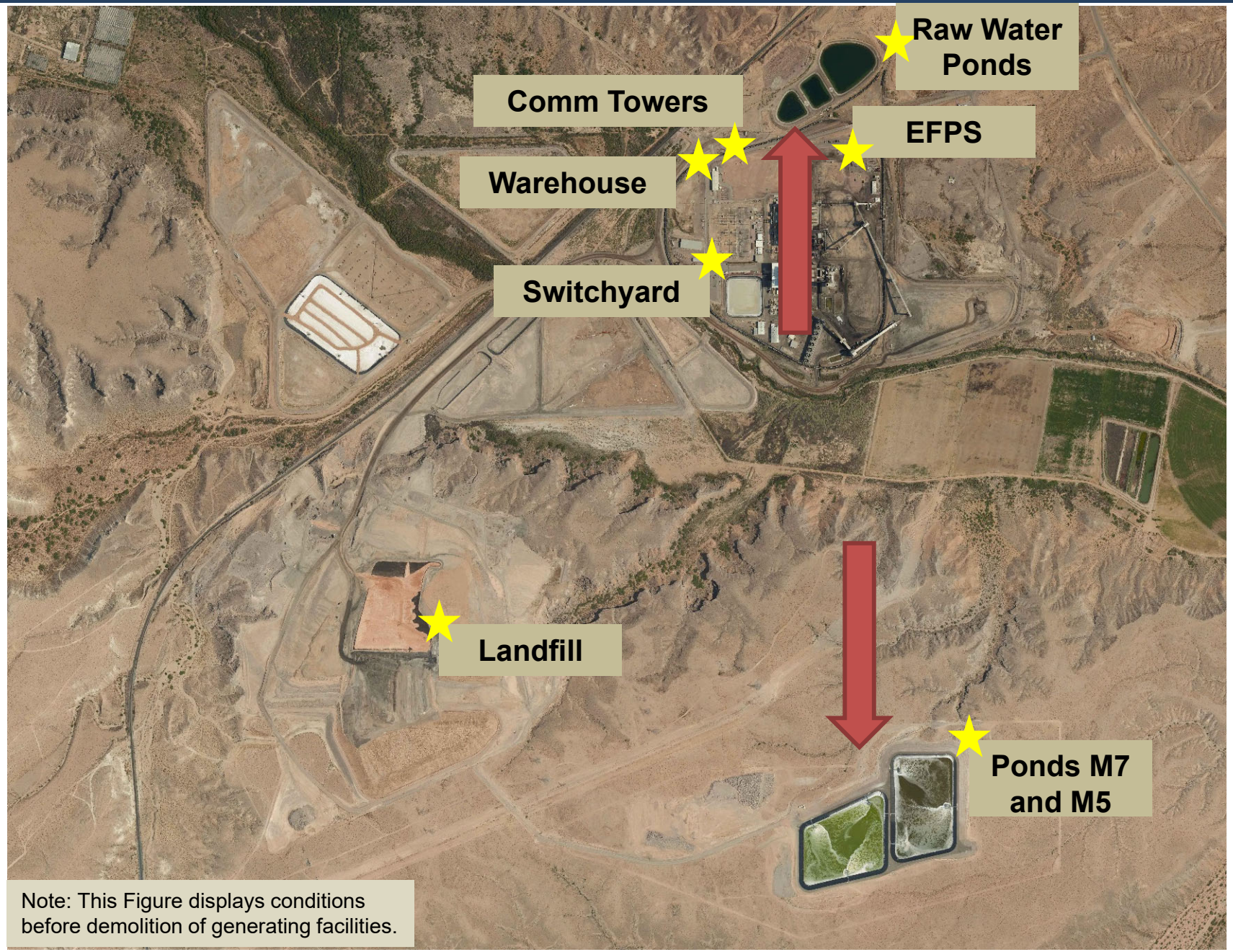
- Mode of failure was water erosion at the base of the dam and seepage within the dam face
- Failure release of 80 billion gallons of water
- 100,000 acres of farm and ranch land were inundated
- 11 people killed
- $1 billion in estimated damages

Reid Gardner Station
History and Demolition

March 22, 2022

Unit	Online	Retired	Demolished
1	June 1965	Dec 2014	July 2020
2	June 1968	Dec 2014	
3	May 1976	Oct 2014	
4	July 1983	Mar 2017	

Reid Gardner Station
Remaining Facilities After Demolition



Reid Gardner Station
Current Pond Conditions

Update on Mesa Ponds

- Approx 3 feet of pond salt in each pond
- < 6 inches of free water (from recent rains)
- First Quarter 2024 ponds solids and liner removal project

Update on Raw Water Ponds

- West pond operates at ½ full
- Central and East pond empty

March 23, 2023

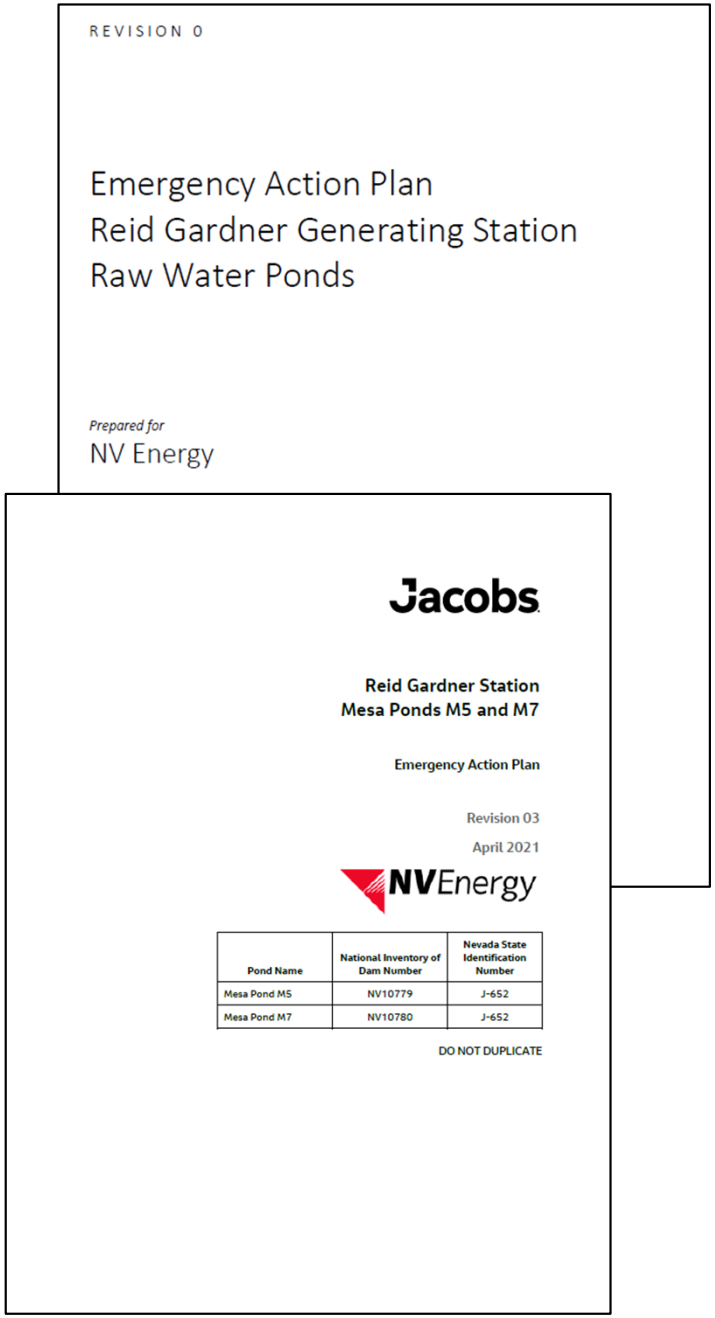
Emergency Action Plan – M5, M7 & Raw Water Ponds

Required by Regulation

- NAC 535.320 and 40 CFR 257.73 (CCR Rule)

Intent of EAP

- Train and assist employees and ER teams in the preparation and response to a dam-safety emergency at the ponds.



REVISION 0

Emergency Action Plan
Reid Gardner Generating Station
Raw Water Ponds

Prepared for
NV Energy

Jacobs

Reid Gardner Station
Mesa Ponds M5 and M7

Emergency Action Plan

Revision 03
April 2021

NVEnergy

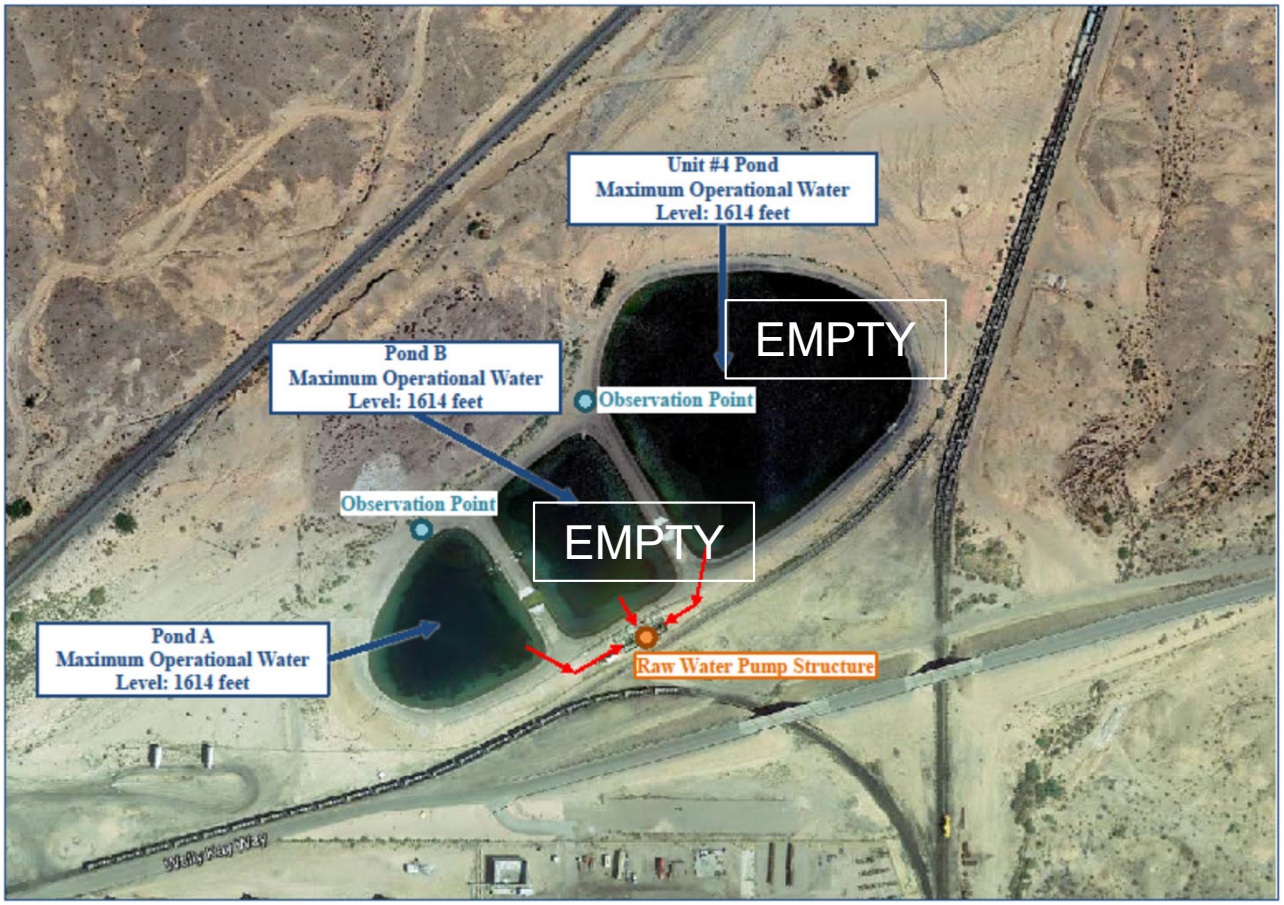
Pond Name	National Inventory of Dam Number	Nevada State Identification Number
Mesa Pond M5	NV10779	J-652
Mesa Pond M7	NV10780	J-652

DO NOT DUPLICATE

Emergency Classifications

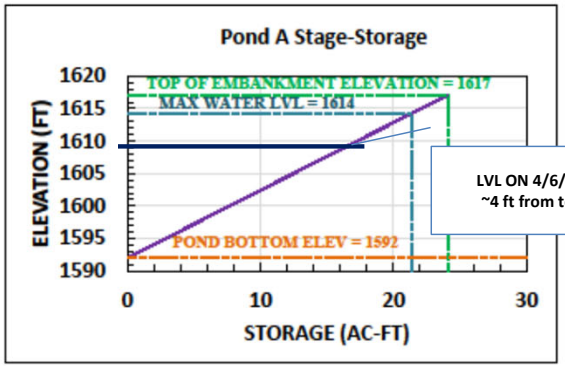
Scenario	Conditions	Response
Non-Failure ✓	• water level > operational level, • minor seepage, cracking, sinkholes	• Engage internal experts for evaluation, monitoring and response
Potential Failure ✓	• Increasing discharge from seepage, cracks, • Water releasing from damaged structures, damaged piping • Verified security threats that if carried out could result in damage to the ponds	• Engage emergency responders for preparation and coordination • Engage dam-safety experts to evaluate actions to prevent failure or reduce impacts
Imminent Failure ✓	• Erosion of crest by large overtopping waves, water level overtopping top of berm • Rapidly progressing seeps, sinkholes, slides of embankment slopes	• immediately initiate evacuations • Make emergency notifications • Engage dam-safety experts to evaluate actions to delay failure or reduce impacts

Raw Water Ponds

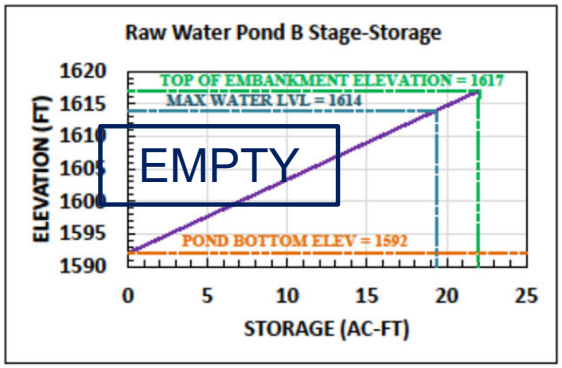


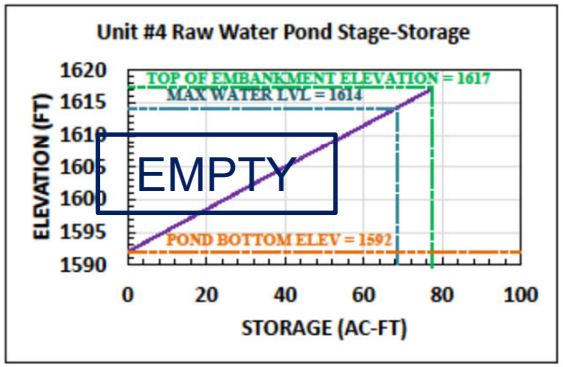
Note: All elevations reference NAVD 1988 vertical datum

Figure 4-2
Dam Facilities Map
Raw Water Ponds
Dam Facilities and Hydraulic Information
Emergency Action Plan
Reid Gardner Station
Moapa, Nevada

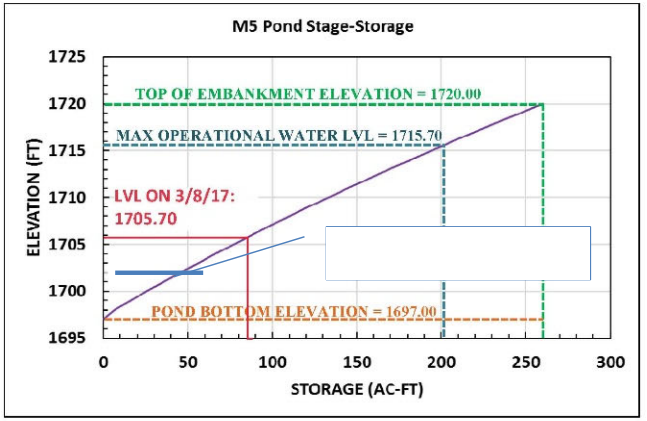


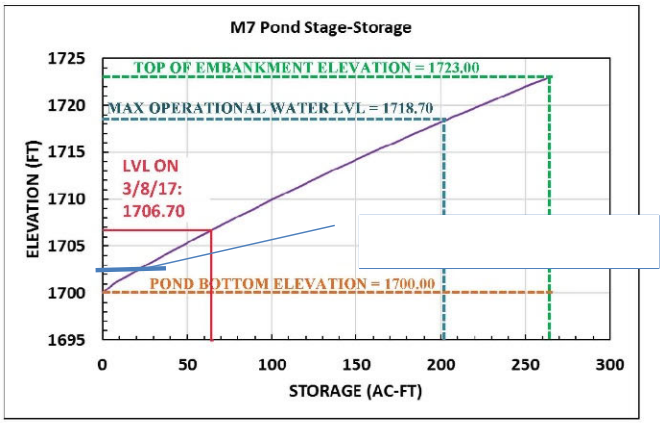
LVL ON 4/6/2020 - 1610
~4 ft from top of berm





Ponds M5 and M7



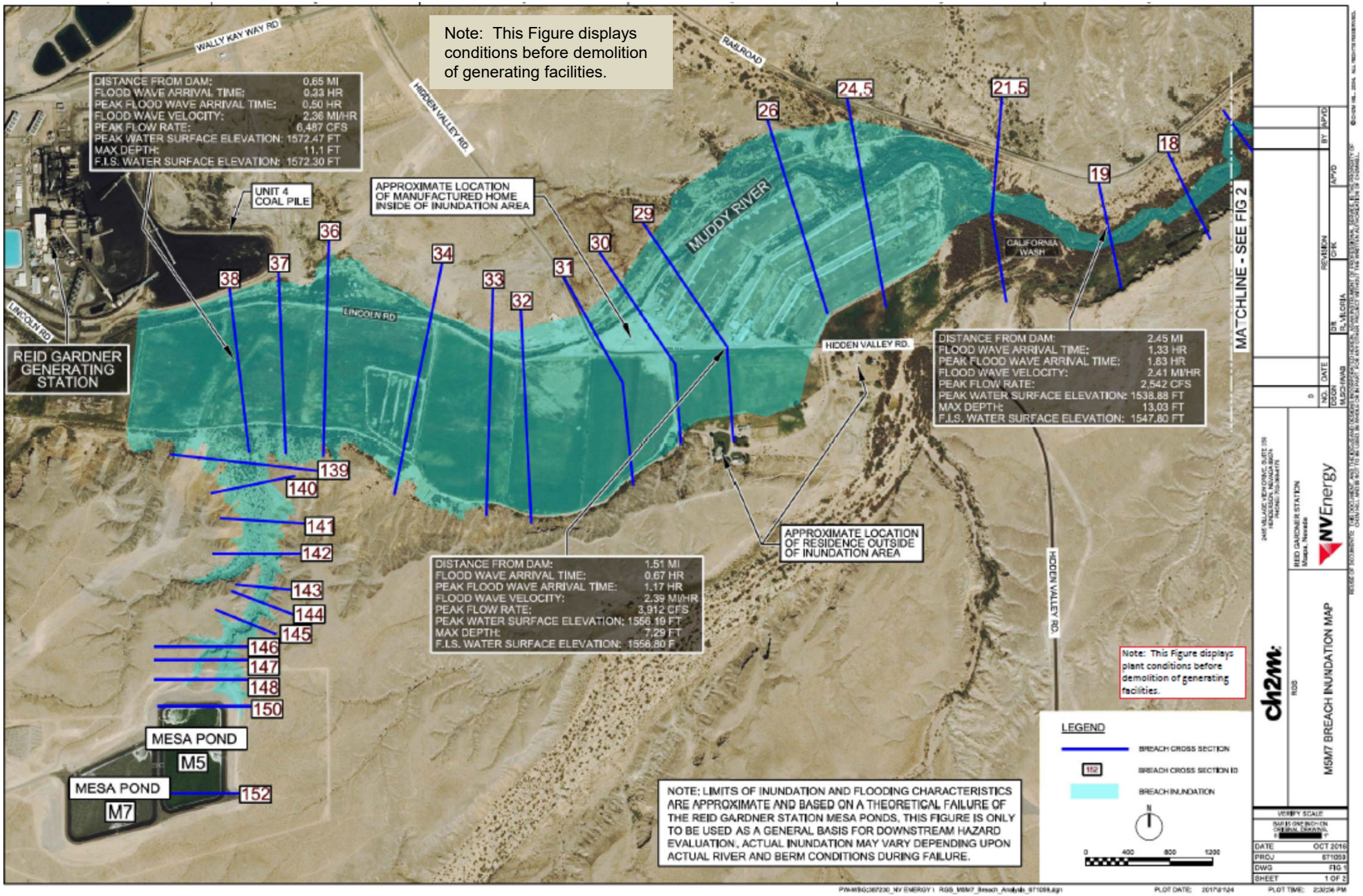


Legend
- Effluent Discharge Pipeline
- Effluent Pipeline Valve Station
- Mixer
- Observation Point
- Pond Effluent Discharge Point

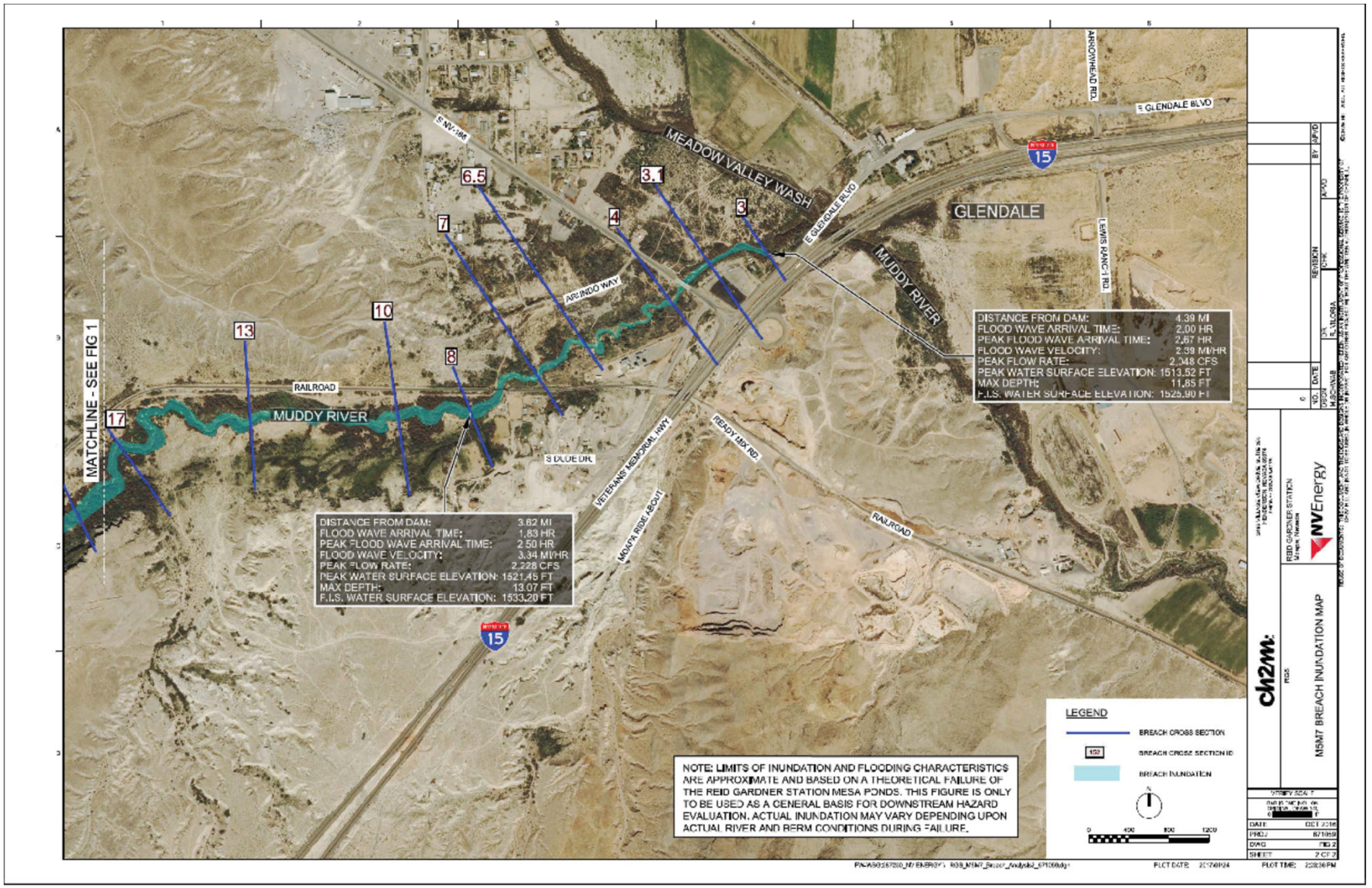
Note: all elevations reference NAVD 1988 vertical datum

Figure 4-2
Dam Facilities Map
Mesa Ponds M5 and M7
Dam Facilities and Hydraulic Information
Emergency Action Plan
Reid Gardner Station
Moapa, Nevada

Pond M5 and M7 Inundation Map



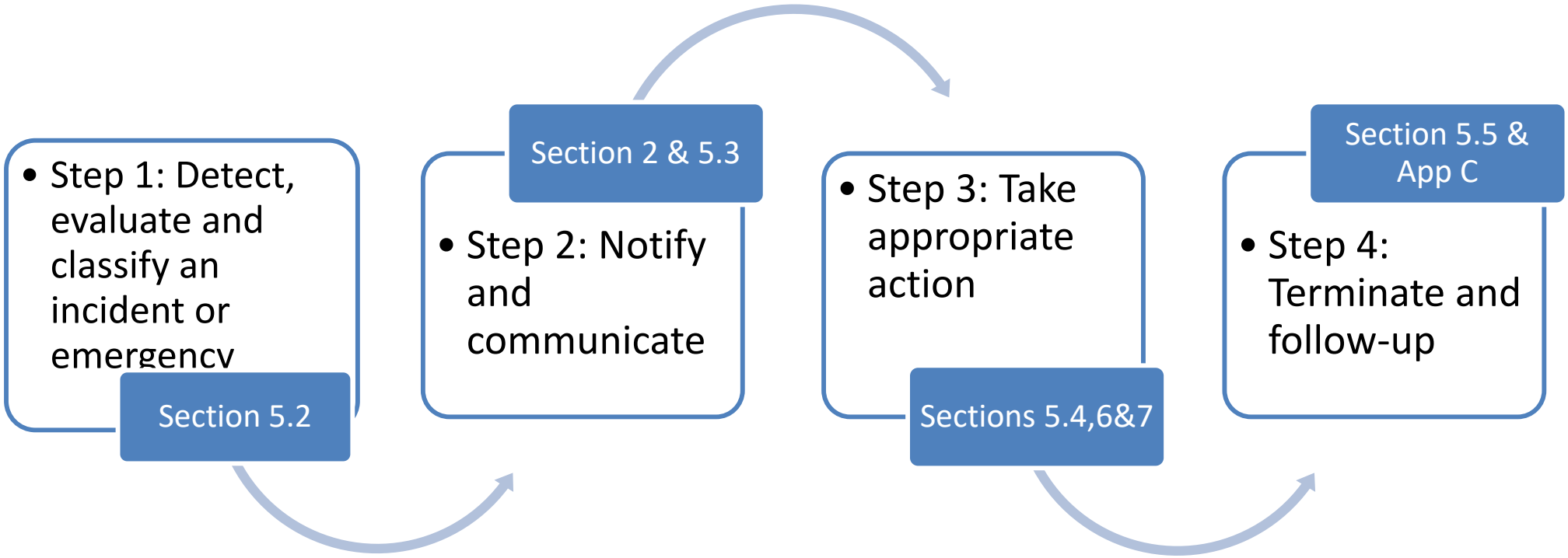
Pond M5 and M7 Inundation Map



Ponds M5&M7 “Sunny Day” Dam Breach Analysis Results

36 mins	• time for leading edge of flood wave to reach the private residence where Hidden Valley Rd crosses the Muddy River
4,000 cfs	• Max flow at the private residence
5 ft.	• Max water elevation in dairy fields
1-2 ft.	• Max water elevation at private residence
2 river miles	• distance it takes to contain potential flood in the Muddy River banks.

4 Step Response Process



4 Step Process (Step 1)

<u>Step 1</u>: Detect, evaluate and classify an incident or emergency

Emergency Classifications:

Non-Failure, Potential Failure, Imminent Failure

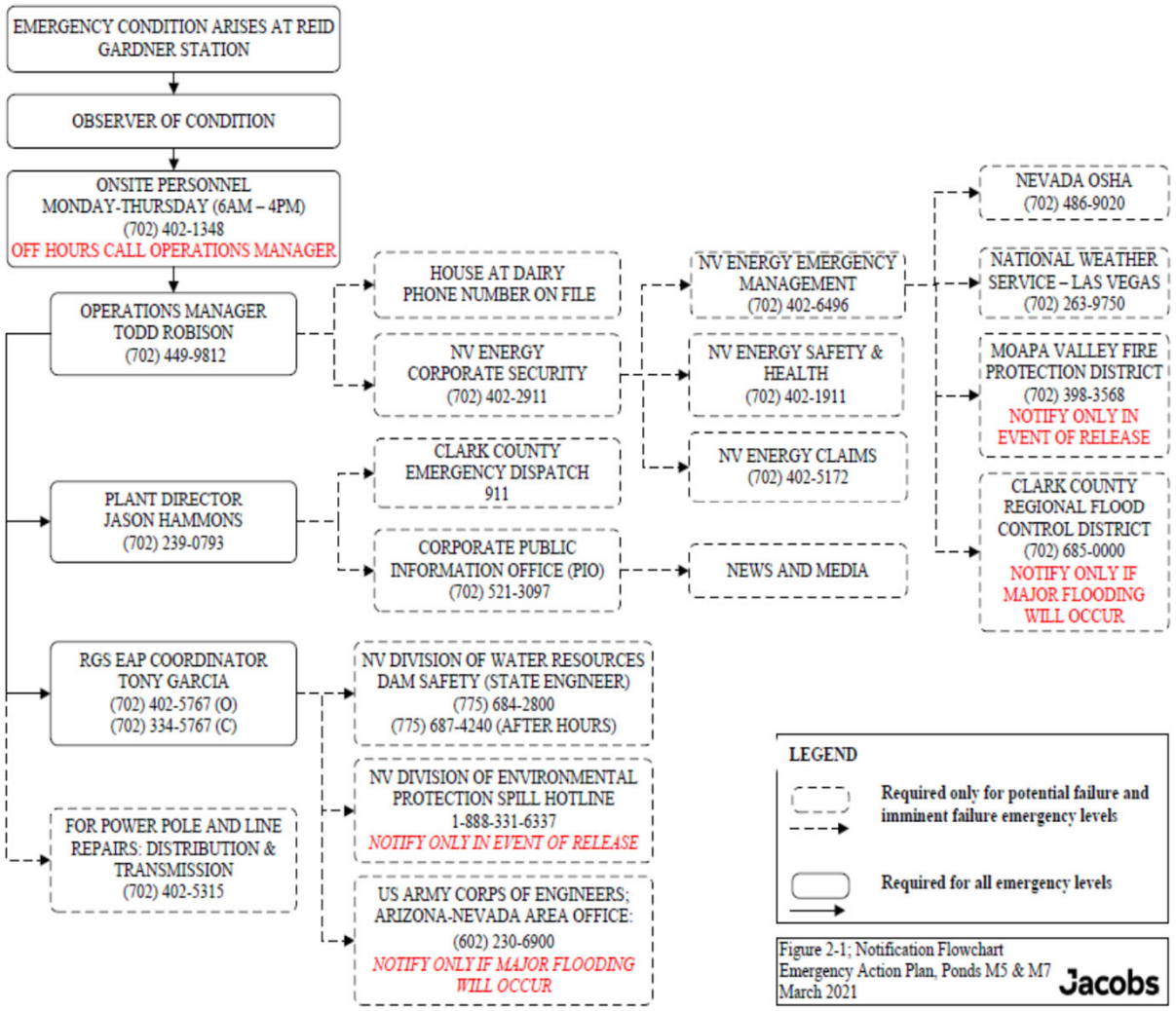
Table 2-1. Emergency Level Determining Guidance

Risk	Emergency Level Determination Guidance	Emergency Level		
		Non-Failure	Potential Failure	Imminent Failure
Flooding	Not considered a likely event for M5/M7 ponds because of the location on Mesa and away from low-lying areas.	●		
Erosion	Incised areas close to the ponds	●		
Overtopping of top of the ponds	Water level is above maximum operational level, but more than 12 inches below the pond embankment	●		
	Water level within 12 inches of pond embankment		●	
	Erosion of embankment area by large overtopping waves			●
	Water level at or nearly at top of dam; water overtopping top of dam, with or without erosion			●
Seepage	New seepage area on or around the M5/M7 Ponds	●		
	New seepage area with cloudy discharge or increasing flow rate		●	
	Rapid flow rate increase with cloudy discharge from an existing seepage area			●
	New, small sand boil, whirlpool, rapid settlement, or sinkhole	●		
	Enlarging sand boil, whirlpool, settlement, or sinkhole – imminent failure if rapid		●	●
Embankment cracking	New cracks in the embankment, greater than 0.25-inch-wide, without seepage	●		
	Cracks in the embankment with seepage		●	
Embankment movement	Evidence of embankment slope movement (sliding, slumping, rotation, settlement)	●		
	Sudden or rapidly progressing slides of the embankment slopes			●
Earthquake	Earthquake felt at ponds M5/M7 or with Magnitude ≥ 4.0 reported within 30 miles	●		
	Earthquake resulting in visible damage to the M5/M7 Ponds		●	
	Earthquake resulting in uncontrolled release of water from the M5/M7 Ponds			●
Piping	Conveyance piping is inoperable or leaking	●		
	Damaged piping produces uncontrolled release of water into or from ponds		●	
Security threat	Demonstration or public protest that raises security threat levels	●		
	Verified bomb threat that, if carried out, could result in damage to the M5/M7 ponds		●	
	Detonated bomb that has resulted in damage to the M5/M7 Ponds			●
Sabotage/ vandalism	Damage to the M5/M7 Ponds with no impact ponds function	●		
	Modification of M5/M7 Ponds that could adversely impact function	●		
	Damage to M5/M7 Ponds that has resulted in seepage flow		●	
	Damage to M5/M7 Ponds that has resulted in uncontrolled water release			●

4 Step Process (Step 2)

<u>Step 2</u>: Notify and Communicate

Based on the level of the emergency, notify parties using the notification flow chart in Section 2



4 Step Process (Step 3)

Step 3: Take Emergency Action

- Prevent or delay dam failure
- Mitigate impacts if failure cannot be avoided.

Depending on the issue and potential level of failure, actions may include:

- Security issues: observe and notify corporate security
- Water level issues: monitoring berm conditions, control water levels and incoming flows,
- Berm integrity issues: reinforce/repair berms, placing traffic controls, initiating evacuation, employing methods to divert flow post failure.

Available Emergency Equipment

Quantity	Description
1	One-ton, 4x4 pickup
1	Half-ton, 4x4 pickup
1	Caterpillar 928 front-end loader
2	Bobcat skid steer loaders
1	Ranger rescue boat with 2-25 horsepower motors
4	All-terrain vehicles

4 Step Process (Step 4)

Step 4: Termination and Follow-Up

- Communicate with all previously-contacted parties (notification flowchart in Section 2)
- Post-event documentation
- Conduct supplemental evaluation of the EAP for its effectiveness and recommended improvements

Roles and Responsibilities

Incident Commander

- Ensures full response process is implemented during an event (Section 5)
- decides when to terminate an event

On-site Personnel

- Mitigate with corrective actions
- Monitor the dam and provide status updates

EAP Coordinator

- assist Incident Commander during emergencies
- provide training
- update documents

Dam Safety Engineer

- consult during emergencies
- conduct annual inspections
- assist with updating EAP

Emergency Management Authorities

- issue public warnings
- perform evacuations
- coordinate outside agency

Questions?

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