

**National Hydropower Association
Hydraulic Power Committee
October 6, 2008 Meeting
Lancaster, PA**



**FERC DAM SAFETY
PROGRAM**



Daniel J. Mahoney

Director, Division of Dam Safety and Inspections

William H. Allerton

Deputy Director, Division of Dam Safety and Inspections

What's New in Security

- 1. Changes to the Hydro Security Program Under Consideration**
- 2. Emphasis for 2009 Security Inspections**
- 3. Miscellaneous**

Changes to the Hydro Security Program Under Consideration

Group 1 Dams:

- **A New Vulnerability Assessment (VA) Will be Conducted Every 5 Years**
- **VA Will be Reviewed and Updated Annually by Licensee to Confirm Assumptions, Especially Threat (similar to annual EAP update).**
- **Licensees certify by letter that update was completed, and updates will be reviewed during inspection.**

Changes to the Hydro Security Program Under Consideration

Group 1 Dams (continued):

- **At a Minimum, the VA Will Consider the Following Threat Scenarios:**
 - **Insider.**
 - **Vandalism/Theft.**
 - **Local group (4 individuals) w/small arms and explosives up to 50 pounds TNT equivalent.**
 - **Dedicated group (4 individuals) w/ small arms, vehicles (land and water), and explosives up to 20,000 pounds TNT equivalent.**
 - **Cyber attack.**

Changes to the Hydro Security Program Under Consideration

Group 2 Dams:

- Security Assessments (SA) Will be Reviewed and Updated Annually by Licensee to Confirm Assumptions**
- Licensees Certify by Letter That Update Was Completed, and Highlight if Any Parameters Have Changed. This Will be Reviewed During Inspection.**

Changes to the Hydro Security Program Under Consideration

Security Plans:

- **Security Plans (SP) to be Updated Annually by Licensee (Similar to Annual EAP Update).**
- **Licensees Certify by Letter That Update Was Completed, and Highlight if any Parameters Have Changed (Inspection Review).**
- **New Sub-Element to SP Will be the Response Plan (Integrates EAP Procedures Within the SP).**
- **SP Must be Tested Every 5 Years (Drill or Tabletop Sufficient).**

Emphasis For 2009 Security Inspections

Group 1 and 2 Dams:

- **Proposed Group Changes Will be Confirmed Over the Winter.**
- **Changes to be Sent by Letter to Licensees, With Comment Period.**
- **During Inspection, Licensees Must Show all Recommendations Suggested From VA and SA. Outstanding Items Will Need Justification for Non-Completion or a Plan & Schedule for Completion.**
- **FERC Will Track Resolution of Recommendations.**

Specific Question

Hazard Classification

One member would like to see a discussion on *hazard classification* because he recently talked to an owner who was told that if even one random guy is downstream fishing that at least makes a dam a significant hazard potential dam. The answer does not appear to be in accord with either the Federal Guidelines or the FERC Operating Manual.

Low Hazard Potential

Dams Assigned the Low Hazard Potential Classification are Those Where Failure or Mis-operation Results in no Probable Loss of Human Life and Low Economic and/or Environmental Losses. Losses are Principally Limited to the Owner's Property.

Significant Hazard Potential

Dams Assigned the Significant Hazard Potential Classification are Those Dams Where Failure or Mis-Operation Results in no Probable Loss of Human Life but can Cause Economic Loss, Environmental Damage, Disruption of Lifeline Facilities, or Can Impact Other Concerns. Significant Hazard Potential Classification Dams are Often Located in Predominately Rural or Agricultural Areas but Could be Located in Areas With Population and Significant Infrastructure.

High Hazard Potential

Dams Assigned the High Hazard Potential Classification are Those Where Failure or Mis-Operation Will Probably Cause Loss of Human Life.

Specific Question

PFMAs at Low and Significant Hazard Dams

Discussion of Low and significant hazard PFMAs schedule and priority, especially compared to the high hazard dams. Some licensees feel that doing the PFMAs on low hazard projects should not be a hard and fast requirement but should be subject to discretion. In some cases it is justified but in many it is not.

Response to Proposed PFMAs at Significant and Low Hazard Dams

- **11 responses received**
- **7 Owners supported the proposal, with suggestions**
- **3 Owners did not agree that it was necessary for Low Hazard dams**
- **Received comments from NHA Hydraulic Power Committee**

Response to Proposed PFMAs at Significant and Low Hazard dams

Suggestions Made By Owners

- **PFMAs at Low Hazard dams should be voluntary**
- **Revise Low Hazard dam criteria to 25 feet high and 50-250 acre-feet**
- **Default should be Owner facilitates, FERC engineer is available when necessary**
- **Delay proposal so owners can focus on the work required at high and significant dam – don't divert limited resources**

Response to Proposed PFMAs at Significant and Low Hazard dams

Comments by NHA Hydraulic Power Committee

- **Some owners thought it was a good idea**
- **Some owners can not afford to divert limited resources to low hazard potential dams**
- **Costs involved not commensurate with project revenues**
- **Some owners did not believe it was worth the effort and expense**

Significant and Low Hazard Dams Under Consideration

- **All Significant Hazard Dams Subject to PFMA
Performed in Accordance With Chapter 14**
- **Flexible on Schedule Within Reason**
- **Low Hazard Dams Consider Making Them
Voluntary**

Question on Proposed PFMAs For Remediations

Also some licensees are being requested to conduct *additional PFMAs for construction/repair projects*. Please comment on the FERC requiring licensees to conduct a *PFMA on new construction or modifications* during the design phase of the project.

Response to Question on Proposed PFMAs for Remediations

- Performing a PFMA on Proposed Remediations During the Design Stages has Been a Long Standing Requirement Since the PFMA Process Was Implemented in 2003.**
- We Have Found That This is an Invaluable Tool to Both the Owner and FERC That Has Resulted in a Better Designed Projects and Has Resulted in Many Cases in Saving Licensees Several Thousands of Dollars.**

Specific Question

General

Update on other FERC initiatives.

Ongoing Initiatives

- **Pumped Storage Technical Guidance Task Group**
- **Regional Technical and Management Workshops**
- **Owners Dam Safety Programs**

Pumped Storage Technical Guidance Task Group

- **Review of all FERC Pumped Storage Projects Following Taum Sauk**
- **November 2006 Workshop with all Owners, Consultants, Federal and State Agencies**
- **Examined the Need for Industry Guidance of Safe Operation**
- **Owners Endorsed the Need for a Guidance Document**

Pumped Storage Technical Guidance Task Group

Purpose

- **Criteria for Pumped Storage owners to assess their facilities and programs**
- **Focuses on water level control and management**
- **Every project has unique design features**

Pumped Storage Technical Guidance Task Group

- **Industry Led Task Group is developed
Safety Guidance**
- **Coordinated with Pumped Storage Users
Group**
- **Guidance document is completed and will
be Posted on our Website Shortly**

Regional Coordination

- **Makes sense to coordinate and collaborate on technical and management dam safety issues**
- **Including Federal and Non-Federal dam owners**
- **Successful in NW – 4th Workshop Scheduled**
- **West Regional Forum Scheduled
January 15-16, 2009**
- **Southeast**

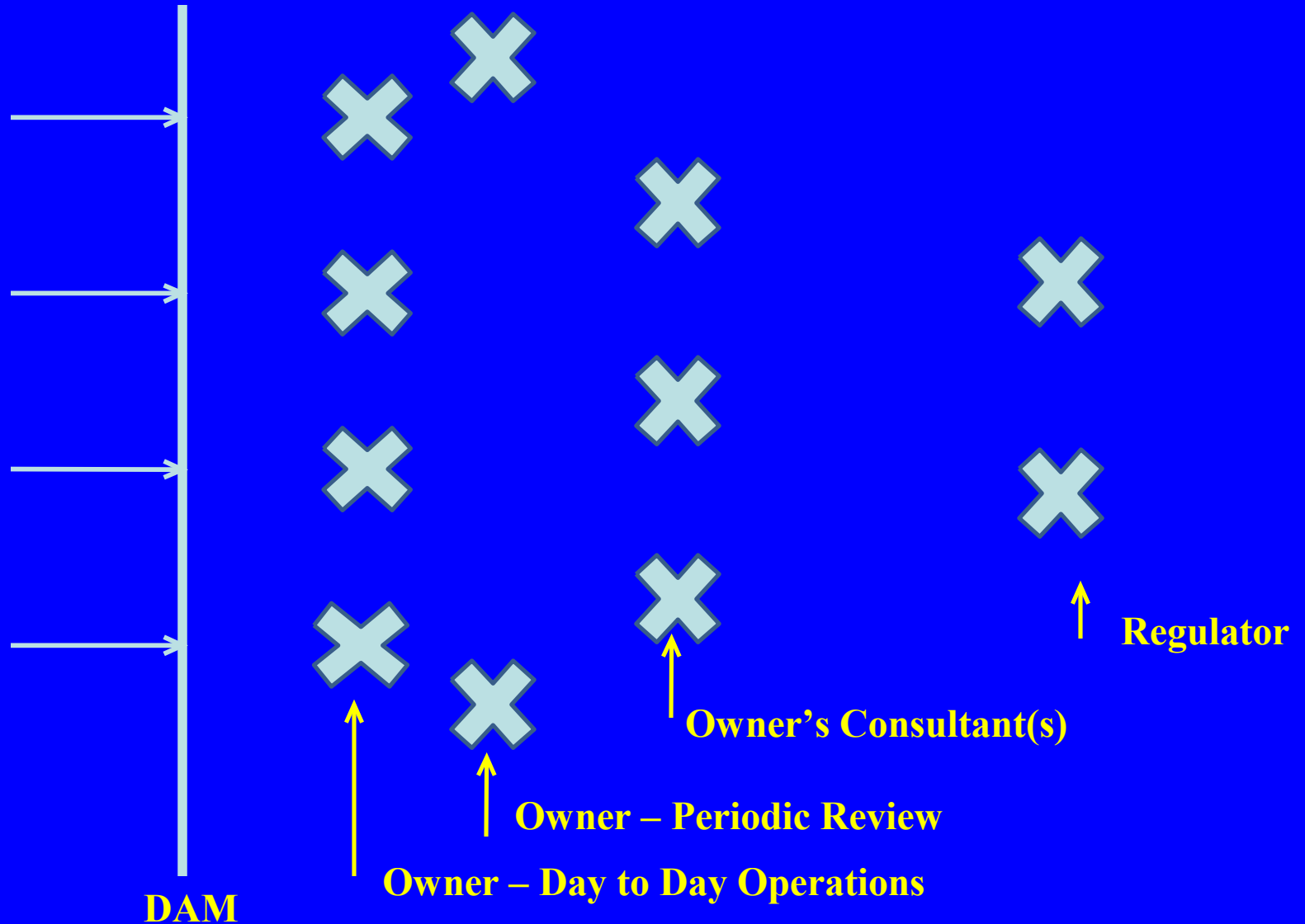
Regional Coordination

- **Mid-Columbia Seismic Study**
- **Owners/Reclamation and USACE**

Owners Dam Safety Programs (ODSP)

- **ODSP Significant Factor in Major Dam Failures**
- **Problems Ranged From Communication Failures to Negligence**
- **Taum Sauk is a Wake Up Call for Dam Safety Community**
- **Peer Review Found Some Owners Deferring Responsibility**
- **FERC Dam Safety Program May be Encouraging This Deference**

Football and Dam Safety



Owners Dam Safety Programs (ODSP)

What is a Good Dam Safety Program?

- **Understand Responsibility**
- **Good Communication**
- **Clear designation of Responsibility**
- **Sufficient Allocation of Resources**
- **Learning Organization**

Owners Dam Safety Programs (ODSP)

What is a Good Dam Safety Program?

- **One size does not fit all**
- **Program meets needs of inventory**
- **For guidance on what FERC believes constitutes a good dam safety program see the Taum Sauk Stipulation and Consent Agreement on the FERC D2SI website at:**

<http://www.ferc.gov/industries/hydropower/safety/projects/taum-sauk.asp>

Owners Dam Safety Programs (ODSP)

- **Discussing importance of ODSP with Owners**
- **Met with owners with good/not so good programs**
- **Internal FERC Assessment**
- **Specific focus of last year's annual inspections**
- **Owners Self Assessment Evaluation Parameters**

Specific Question

Risk Assessment

Any update on the FERC's consideration of risk assessment when analyzing the need for safety enhancements, such as dam stabilization?

Risk Informed Decision Making

- **The FERC Recognizes the Value Risk Informed Decision Making Brings to Dam Safety**
- **The FERC is Exploring How Risk Assessment Techniques Can be Best Utilized in a Regulatory Environment**

Risk Assessment

- **Staff trained and receptive**
- **Inventory Risk Assessment**
- **Pilot Risk Assessment of Project**
- **Partnering with USACE and Reclamation**

**National Hydropower Association
Hydraulic Power Committee
October 6, 2008 Meeting
Lancaster, PA**

QUESTIONS ?