

## Draft Agenda for FERC Surveillance and Monitoring Workshop

October 18, 19 and 20, Washington D.C.

Moderators: Leon Holden and Bill Allerton

### Day 1

**Tuesday,**

**October 18, 2005**

	<u>Agenda</u>	<u>Presenter</u>
7:30 a.m.	Registration	
8:00 a.m.	Introduction and Overview	Gus Tjoumas
8:15 a.m.	Overview of Current FERC Instrumentation Program <ul style="list-style-type: none"> <li>• Chapter 9 - of the FERC Engineering Guidelines - Instrumentation and Monitoring</li> <li>• Chapter 14 - of the FERC Engineering Guidelines - Dam Safety Performance Monitoring</li> <li>• Annual Instrumentation Submittal</li> <li>• Chapter 3 of the FERC Operating Manual - the Operation Inspection</li> <li>• Chapter 3 of the FERC Operating Manual - the Special Instrumentation Inspection</li> </ul>	John Zygaj, FERC-ARO Mike Monahan, FERC-NYRO
9:30 a.m.	Discussion and Questions	
9:45 a.m.	Break	
10:00 a.m.	Common Instrumentation for Embankment Dams, Application, Limitations, Assess Condition of Existing Instrumentation	Leon Holden, FERC-SFRO Emeruwa Anyanwu, FERC-NYRO
10:30 a.m.	Discussion and Questions	
11:30 a.m.	Lunch	
12:30 p.m.	Case Study: Brule (Embankment Dam)	Olaf Weeks, FERC-CRO
1:30 p.m.	Discussion and Questions	
1:45 p.m.	Common Instrumentation for Concrete Dams, Application, Limitations, Assess Condition of Existing Instrumentation	Bradley Davis, FERC-ARO
2:00 p.m.	Discussion and Questions	

2:30 p.m.	Break	
2:45 p.m.	Case Study: Santeelah (Concrete Arch Dam)	John Lyon, FERC-ARO
3:30 p.m.	Discussion and Questions	
3:45 p.m.	Vendor Presentation - Instrumentation of Dams	Dr. Allen Marr, Geocomp
	1. Proper Installation Details	
	2. Advantages/Limitations of different instrumentation types	
	3. Testing	
4:45 p.m.	Discussion and Questions	
5:00 p.m.	Adjourn	

## Draft Agenda for FERC Surveillance and Monitoring Workshop

### Day 2

Wednesday,

October 19, 2005

	<u>Agenda</u>	<u>Presenter</u>
8:00 a.m.	<p>Planning: Instrumentation System Design, Potential Failure Mode Analysis, Experiences with PFMA's and Instrumentation System Design General Discussion of the process of designing an instrumentation system</p> <ol style="list-style-type: none"> <li>1. Recognize the need for Instrumentation</li> <li>2. Define Project Conditions</li> <li>3. Parameters to be Monitored</li> <li>4. Selection of Instrument Type to Suit the Need</li> <li>5. Design – Location, Plans And Specifications</li> <li>6. Construction, Field Inspection, and QC</li> <li>7. Documentation, Monitoring and Upkeep/Calibration</li> </ol>	<p>Norm Weseloh, FERC-PRO</p> <p>Justin Nettle, FERC-PRO</p>
	<p>Potential Failure Mode Analysis - How can we instrument to monitor?</p> <ol style="list-style-type: none"> <li>1. PFMA Process / Background</li> <li>2. Identification of Failure Modes / Risk Reduction Monitoring Suggestions</li> <li>3. Results of the First Years of the FERC DSPMP</li> <li>4. Focusing an Instrumentation Program to Identified Failure Modes</li> </ol>	<p>Jeff Esterle, FERC-PRO</p>
9:00 a.m.	<p>Discussion of Experiences With PFMA's and Instrumentation System Design Discussion and Questions</p>	<p>Norm Weseloh, FERC-PRO</p>
9:30 a.m.	<p>Break</p>	
9:45 a.m.	<p>Case History: Saluda Dam</p>	<p>Bill Argentieri, SC E&amp;G</p>

## Pros / Cons, and Experiences

Jon Burgess, FERC-ARO

10:30 a.m.	Field Monitoring and Data: Saluda Dam	Elena Sosenkina, Kleinfelder (Previously with Rizzo Assoc.)
	<ol style="list-style-type: none"> <li>1. Monitoring Program</li> <li>2. Maintenance and Calibration</li> <li>3. Monitoring Schedules</li> <li>4. Documentation</li> <li>5. Collection of Instrumentation Data <ol style="list-style-type: none"> <li>a. Personnel qualifications and Responsibilities</li> <li>b. Data Collection Frequency</li> <li>c. Field Data Records</li> </ol> </li> </ol>	
11:35 p.m.	Discussion and Questions	
12:00 p.m.	Lunch	
1:00 p.m.	Data: Processing and Presentation of Instrumentation Data	John Zygaj, FERC-ARO Bradley Davis, FERC-ARO Leon Holden, FERC-SFRO
	<ol style="list-style-type: none"> <li>1. Analysis Data And Engineering Evaluation</li> <li>2. Thresholds</li> <li>3. Reporting of Conclusions</li> <li>4. Review of Instrumentation Submittals</li> <li>5. What is expected of our FERC inspectors when reviewing instrumentation</li> <li>6. Sample Exercise/Discussion of an instrumentation review (Time permitting)</li> </ol>	
2:15 p.m.	Discussion and Questions	
3:00 p.m.	Break	
3:15 p.m.	Vendor presentation focusing on Vibrating Wire Piezometers	Tony Simmonds, GeoKon
	<ul style="list-style-type: none"> <li>• Installation, long term drift, problems with hooking up</li> <li>• Time permitting: new instruments and other instruments</li> </ul>	
4:00 p.m.	Discussion and Questions	
4:10 p.m.	Open Panel with questions and comments	

from the audience: Panel will discuss the following:

- The importance of knowing the purpose and installation details of the instrumentation and monitoring systems (i.e., where the piezometer tip is and where it is measuring water pressure).
- Knowing that the monitoring instruments are functioning and that they are giving accurate information.
- Minimum instrumentation needed based on a dam's unique circumstances.
- Data presentation and interpretation
- The design of a monitoring program using the results of a PFMA to monitor important potential failure modes.
- Handling anomalies in instrumentation readings
- Lessons Learned from Case Studies
  1. FERC: Gus Tjoumas,  
Dan Mahoney ,  
TRG Team
  2. Licensee: Ernie Brockman,  
Bill Broderick.
  3. Consultant: Elena Sosenkina,  
Ed Luttrell

5:30 p.m.

Adjourn

## Draft Agenda for FERC Surveillance and Monitoring Workshop

### Day 3

**Thursday,  
October 20, 2005**

		<u>Presenter</u>
8:00 a.m.	• Instrumentation and Performance Monitoring • Bureau of Reclamation	Randy Welch, Bureau of Reclamation
8:50 a.m.	Questions	
9:00 a.m.	Dam Safety Field Data Evaluation On NYPA Earth Embankment Structures - St. Lawrence, Niagara & BG Projects.	Fan Xi & Bill Broderick, NYPA
9:50 a.m.	Discussion and Questions	
10:00 a.m.	Break	
10:15 a.m.	Case History: Part 12 Consultant	
	1. Collection, Analysis, Evaluation; Results	
	2. Consultant's Experience in the Use and Analysis of Data	
	a. During Part 12	
	b. Remedial Measures – Design And Specifications	Ernie Brockman, Duke Power
	c. Experience & Case History	Ed Luttrell, Devine Tarbell Associates
11:15 a.m.	Discussion and Questions	
11:30 p.m.	Lunch	
12:30 p.m.	Vendor presentation focusing on Fiber Optics, Inclinometers	RocTest
	Time permitting: new instruments and other instruments	
1:20 p.m.	Discussion and Questions	
1:30 p.m.	Audience Participation, Questions, Course Evaluation and Suggestions for Improvement	Bill Allerton, FERC
2:30 p.m.	Adjourn	