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Good morning Mr. Chairman and Commissioners. Thank you for allowing the Division of Dam Safety and Inspections (D2SI) to make a presentation to you today about some of the very important work we do. First I would like to describe the mission of the Division, the projects that we oversee, and our regional offices. This will be followed by two presentations by my staff on recent construction of two hydroelectric projects.

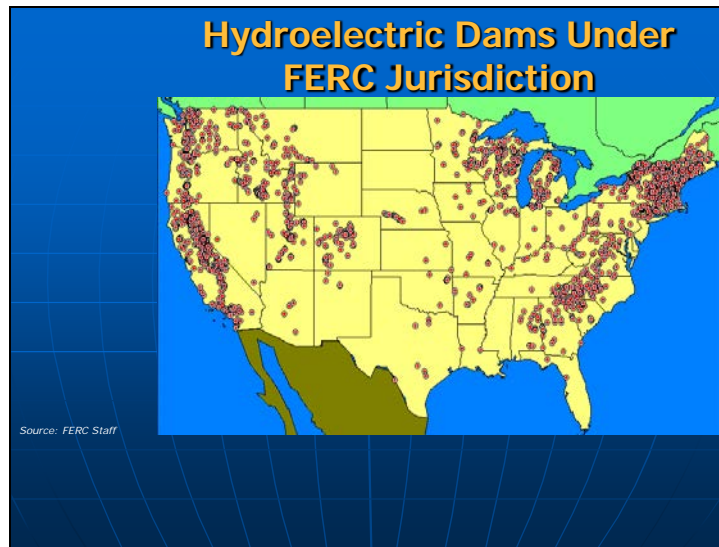
D2SI Mission

Protecting life, health, property and the environment of regulated projects by implementing the Commission's:

- Dam safety program
- Physical security program
- Cyber security program
- Public safety program

The Division's mission is to protect life, health, property and the environment of hydroelectric projects within the Commission's jurisdiction. We do this through implementation of the Commission's dam safety, physical security, cyber security and public safety programs.

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There are over 1,600 non-federal hydroelectric projects including over 2,500 dams regulated by the Commission. This represents 55,800 MW of hydroelectric capacity, which is just over half of all hydroelectric capacity in the US.

| FERC DAMS By Hazard Potential | |
|--|--------------|
| High | 805 |
| Significant | 173 |
| Low | 1,545 |
| Total | 2,523 |

Our dams are classified by their Hazard Potential. This rating does not reflect the dams stability but rather the potential loss should the dam fail. A dam is rated as high hazard if its failure could cause a loss of life; as significant hazard if its failure could cause economic loss, environmental damage, or disruption of life line facilities such as loss of drinking water; and low hazard if it would result in low economic or environmental damage. The chart shows that 805 dams are classified as high hazard, 173 are classified as significant hazard, and 1,545 are classified as low hazard. Those rated as high or significant are inspected annually. Those rated as low are inspected every three years. The inspections are performed to ensure the dams meet the Commission's safety standards, which are laid out in our Engineering Guidelines.



The critical mission of D2SI is the safety of dams under the jurisdiction of FERC's Hydropower Program. We are focused on the performance of the structures, and through regular inspections identify potential dam safety issues such as excessive seepage, stability problems, or security vulnerabilities. We continually assess if the critical loading conditions such as flood or seismic are appropriate, review the general health of the dams by careful evaluation of instrumentation and monitoring programs, review the design of new or remediated hydropower projects, and perform regular site inspections to ensure good engineering practice is being used during construction. We also use Independent Boards of Consultants, a group of technical dam safety experts, to provide expert oversight on unique or difficult projects. Board members are selected based on their technical expertise in relation to the issues at a specific project. Instances can occur which provide very little to no warning that may threaten the integrity of the structure, and we are always "at the ready" to respond to emergency situations by providing our technical expertise and guidance to the licensee.

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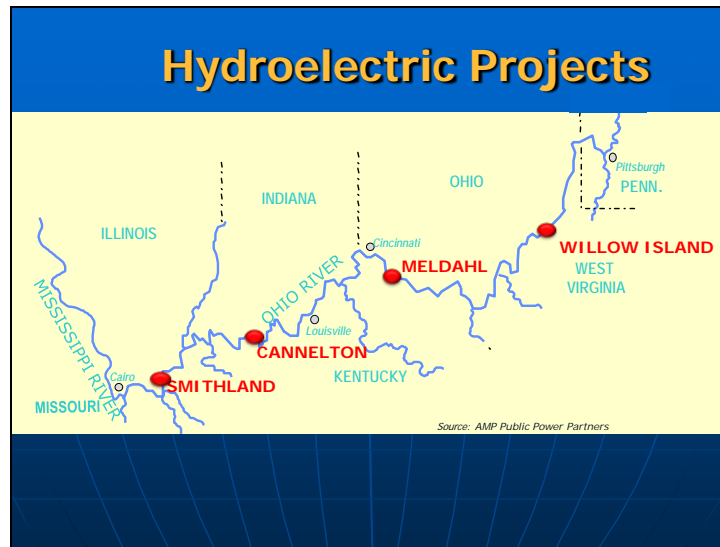


The Commission's dam safety program is carried out through its five Regional Offices as well as through staff here in Washington, DC. The Regional offices are located in Chicago, New York, Atlanta, San Francisco, and Portland. The map shows the states covered by each Regional Office.

Two members of my staff are here to discuss two recent construction projects; one is the construction of a hydropower plant, and the other is the expansion of an existing hydropower project.

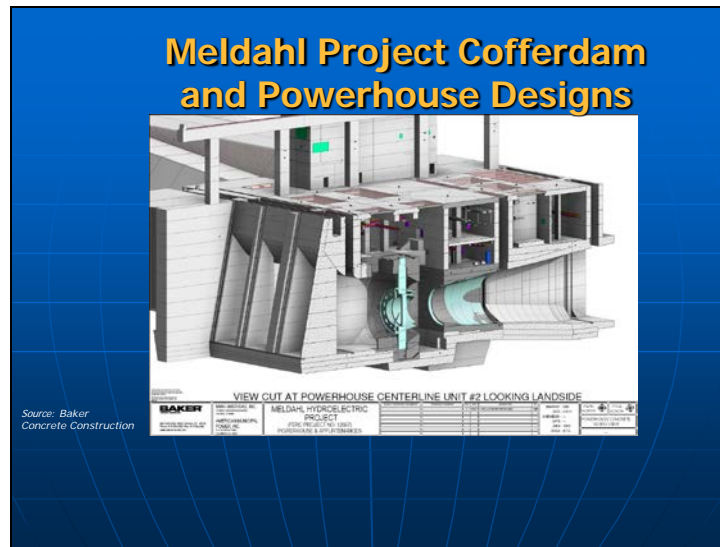
I would now like to turn it over to Kevin Griebenow, a Civil Engineer in our Chicago Regional Office.

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Good morning Mr. Chairman and Commissioners. I will speak today about the construction of the Meldahl Project, a joint venture between the City of Hamilton, Ohio and American Municipal Power (AMP). Between 1988 and 2008, four licenses were issued to construct and operate new hydroelectric projects at US Army Corps of Engineers Locks and Dams on the Ohio River. These were the Smithland, Cannelton, Meldahl, and Willow Island Projects which were the first major new hydropower projects constructed in several decades in the U.S. Together these projects would provide more than 300 MWs of clean, renewable energy.

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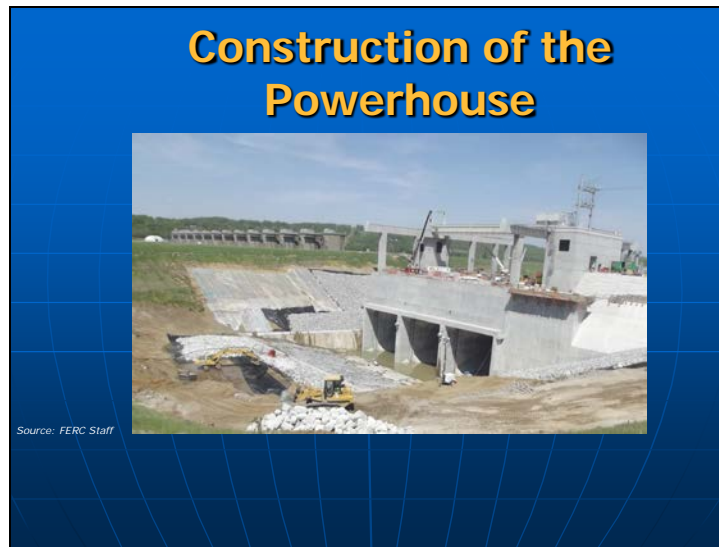


The work for us, the civil engineers in D2SI started immediately after the license for Meldahl was issued on June 25, 2008. Our job was to review and approve a multitude of submitted plans to ensure the project designs met the safety requirements of our Engineering Guidelines. The plans included the Geotechnical Investigation Plan, a Physical Hydraulic Model Study, Floodplain Study, Cofferdam and Powerhouse Designs, Quality Control and Inspection Plan, Dam Safety Surveillance and Monitoring Plan, and a Temporary Emergency Action Plan.



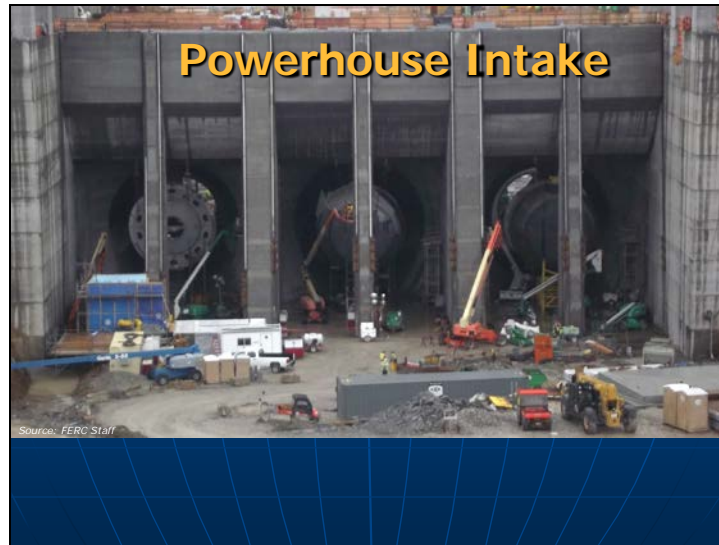
Before you can build the powerhouse, a cofferdam is constructed in the river and dewatered. In this case its size equals a football stadium 125 feet deep. Construction of the cofferdam began in May 2010. To build the “stadium”, about 400,000 cubic yards of earth was excavated. The final portion of the excavation was blasting and removing weathered limestone to provide a solid foundation for the powerhouse. The total amount of time to complete the cofferdam was about 15 months.

During construction D2SI staff conducted numerous inspections during critical phases of work. These inspections were to review construction progress, evaluate adequacy of quality control, and discuss any problems that arose. By being on-site, staff was able to confirm that the project was being constructed in accordance with the Plans and Specifications, and this also helped to keep lines of communication active and effective with the Licensee. With the Meldahl Project, I became heavily involved when the construction was nearing completion and commercial operation was pending.



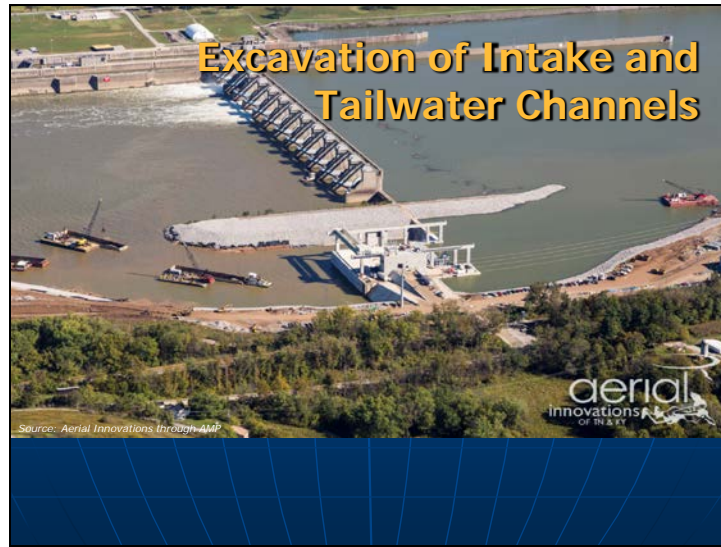
Construction of the powerhouse began immediately after completion of the cofferdam. The photo shows the downstream end of the powerhouse in 2013. The Corp's spillway gates can be seen in the background.

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This photo shows construction activity at the powerhouse intake in 2013. At the peak of construction activity, there were more than 400 workers on site. It took about 2.5 million hours to construct. Construction used more than 6,000 tons of steel and more than 100,000 cubic yards of concrete. The powerhouse was declared watertight on February 7, 2014.

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With the powerhouse watertight and ready to receive the Ohio River, the cofferdam was removed and the excavation of the intake channel and tailwater channel (or outflow channel) were completed.

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Full commercial operation of the 105 MW project began on April 12, 2016, six years after construction began. Total cost for the project was just under \$700 million. The recreation area for fishing and picnicking that was required by the license along the downstream river bank is proving to be extremely popular. So popular the licensee is looking to expand it.



With steep learning curves for everyone, the licensees, designers, and contractors have re-learned what it takes to build a new hydropower facility.

I have learned a tremendous amount being involved with the design and construction of Meldahl, as well as the Cannelton and Smithland Projects. I was challenged through all of these phases to ensure the aspects of our dam safety program and the license requirements were met. Ultimately, I tried to maintain a good rapport with all of the people involved because with a project of this size communication is vital.

Now, I would like to turn this over to Doug Johnson, the Regional Engineer in our Portland Regional Office.



Good morning Mr. Chairman and Commissioners. My presentation is a brief overview of the Blue Lake Dam Expansion Project in Sitka, Alaska. The Blue Lake Project, is owned and operated by the City and Borough of Sitka, Alaska. It is located in southeast Alaska and provides municipal water supply and 16.9 MW of hydroelectric power to Sitka.

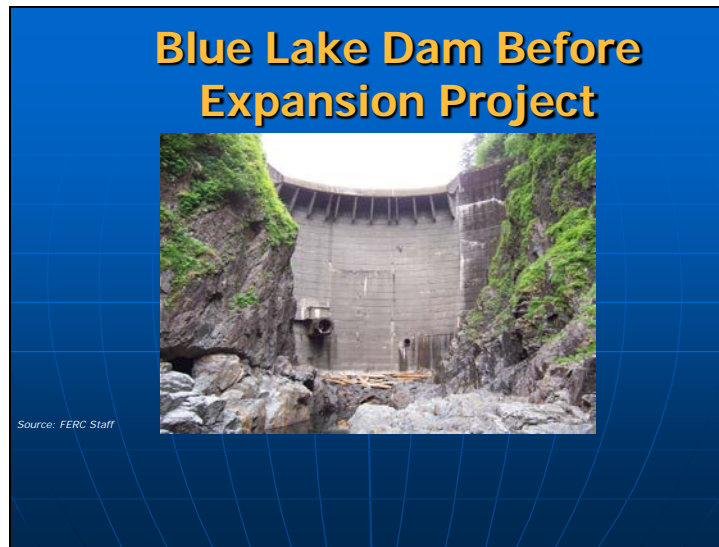
To ensure the project was designed and constructed safely and in accordance with Project Plans and Specifications, D2SI Staff did an engineering review of the project design, participated in 12 Board of Consultants oversight meetings, and conducted 12 construction progress inspections of the project. This project involved complex structural engineering analysis and design due to the large raise in dam height at a challenging site. Seismic and flood loadings had to be re-assessed with the proposed modification. The Board of Consultants, consisting of three dam safety engineering experts, was a critical component to ensuring an effective design and construction project.

Blue Lake Project

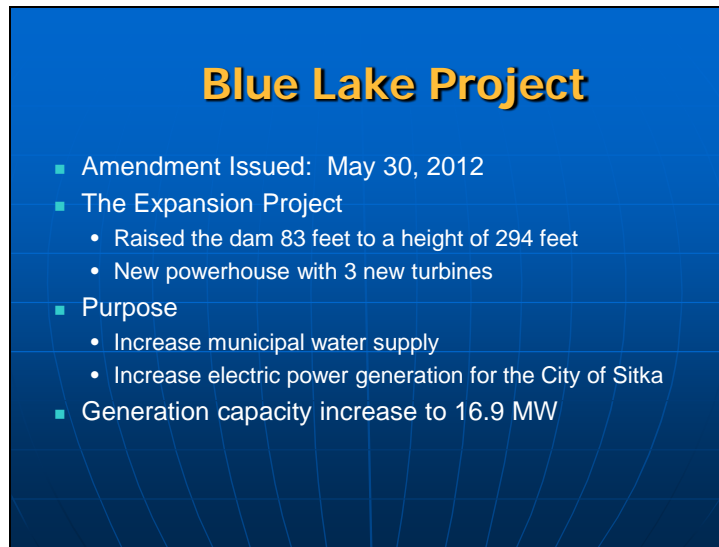
- Originally licensed on April 24, 1958
- Project generation capacity of 6 MW
- A 211-foot-high concrete arch dam
- Re-licensed on June 10, 2007

The project was originally licensed in 1958 to provide 6 MW of electricity, and required construction of a 211 foot high concrete arch dam which raised the natural level of Blue Lake, the project reservoir, about 200 feet. The project was re-licensed on June 10, 2007.

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Here is a picture of the original Blue Lake Dam prior to enlargement. As you can see it is located in a steep narrow gorge with limited access.

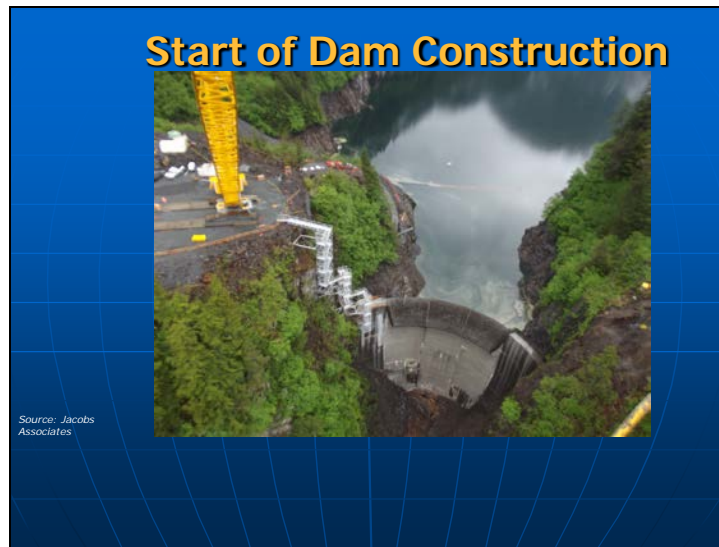
A blue rectangular slide with a grid pattern. The title 'Blue Lake Project' is centered at the top in a bold, yellow font. Below the title is a bulleted list of project details in white text.

Blue Lake Project

- Amendment Issued: May 30, 2012
- The Expansion Project
 - Raised the dam 83 feet to a height of 294 feet
 - New powerhouse with 3 new turbines
- Purpose
 - Increase municipal water supply
 - Increase electric power generation for the City of Sitka
- Generation capacity increase to 16.9 MW

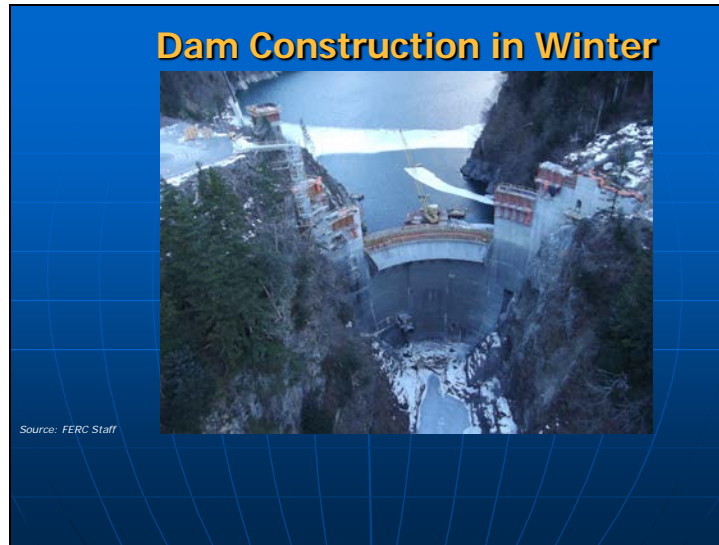
Due to increasing costs for fuel oil (used as a backup to hydropower) and increased electricity demand, the City decided to apply for an Amendment to its license to increase capacity. The Amendment allowed Sitka to increase the height of the dam by 83 feet and construct a new powerhouse with three new turbines, which would increase total capacity to 16.9 MW, and increase average annual generation by 54%.

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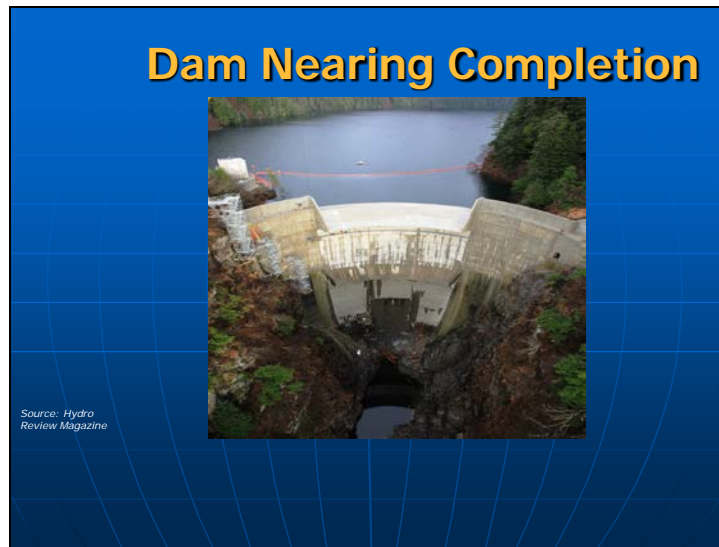
This photo shows the difficult site conditions which required the contractor to use a construction crane to be able to reach across the dam. Also, considerable scaffolding was necessary for workers to access the dam down the steep canyon walls.

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By March of the 2nd year of construction the dam raise began to take shape. Construction continued through winter conditions.

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And by summer of the 2nd year, the raised dam was nearing completion.



The newly constructed powerhouse downstream from the dam on Sawmill Creek housed the three new units. The old powerhouse was decommissioned, and a fourth unit was rehabbed with the recommissioning of the fish unit bypass. The fish bypass releases water to the creek to provide instream flow for salmon. The fish unit generates power from this required flow.



The Blue Lake Expansion Project construction was completed and the project recommenced generation on November 14, 2014; two and a half years after the amendment was issued. The total project construction costs were estimated to be approximately \$100 million. The City and Borough of Sitka's power needs are now completely met with hydroelectric power.

This concludes our presentation. We would be happy to address any questions you may have.



FERC
Office of Energy Projects
Division of Dam Safety and
Inspections

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