# Susitna Hydro Evaluation Project

## Seminar on the Development of Large Hydroelectric Projects with a Focus on the Susitna Project

*presented to*

## Alaska Energy Authority

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northern economics inc.

DTA
Devine Tarbell & Associates, Inc.
Consulting Engineers, Scientists, & Regulatory Specialists

# Regulatory and Environmental

# The Federal Power Act (FPA)

- The hydropower industry is regulated by the Federal Energy Regulatory Commission (FERC) under authority granted to it by Congress under the Federal Power Act.
- The FPA was passed by Congress in 1920, with major amendments in 1935, 1986, and 2005.

# **FPA** *continued*

- Under the Federal Power Act, FERC has exclusive authority to license non-federal water power projects on navigable waterways, on federal (reservation) lands, and at federal projects.
- FERC issues licenses for up to 50 years.
- To continue operating a project after the initial license term, the project must be ***relicensed***.

# FPA *continued*

- Comprehensive Plan Standard
  - "Best adapted to a comprehensive plan for the development and utilization of the waterway"
- Critical sections include:
  - **Section 10(a):** Instructs FERC to consider commerce, water power, protection of fish and wildlife, and other beneficial public purposes
  - **Section 4(e)**: Mandatory conditioning by land management agencies; "equal consideration" language
  - **Section 18**: Fishway prescriptions
  - **Section 10(j) [ECPA amendment]**: Fish and wildlife agency recommendations

# Who's In Charge?

- The Commission is composed of five members appointed by the President with the advice and consent of the Senate. No more than three of the five members can be from the political part of the current administration.
- The five current Commissioners are Joseph Kelliher (Chairman), Phillip Moeller, Suedeen Kelly, Marc Spitzer, and Jon Wellinghoff.
- The Commission is supported by a staff, including the Office of Energy Projects, and currently headed by the Director Mark Robinson.

# Mandatory Conditioning Authority

- Certain resource agencies have statutory authority to specify license conditions. This is called Mandatory Conditioning Authority.

- Mandatory conditioning authority allows certain regulatory agencies to impose license conditions that FERC must include in the license without modification.

# Who Can Influence the Outcome?

- §18 (FPA) fishway prescriptions
  - NMFS
  - USFWS
- §4e (FPA) conditions prescribed by federal land management agencies to ensure that projects within federal reservations will provide adequate protection and utilization of the reservation
  - BLM, USFS, NPS, others
- §401 (CWA) water quality certification conditions
  - State water quality agency
- Coastal Zone Management; Endangered Species

# Who Gets To Come To the Party? Everybody!

- Other groups
  - Non-governmental organizations (NGOs)
  - Tribal groups
  - Local groups and groups from far away
  - Industry
  - Landowners (public and private)
  - Power purchasers
  - Ratepayers
  - Public

# Two Decades Later

What has changed in 25 years in the area of hydropower project licensing and development?

# EVERYTHING!

# Overview

- The landscape of FERC licensing today is very different from the one faced by the previous license application for the Susitna Project. Twenty-five years ago, FERC believed it had near-exclusive authority over the conditions placed on a Project
- Throughout the late 1980s and early 1990s, FERC's licensing process evolved as a result of internal and external forces (i.e., Congress and the Courts). The authority of FERC today is considerably changed from the role it assumed in the early '80s
- Unlike the hydropower licensing of the early 1980s, wherein FERC exercised considerable unilateral judgment, today certain resource agencies have considerable discretion in licensing decisions.

# New Federal Laws

New federal laws have been passed that amend the Federal Power Act:

(1) ECPA, 1986

(2) EPAct of 2005

# Electric Consumers Protection Act

# Energy Policy Act of 2005

- Amended the Federal Power Act with the Electric Consumers Protection Act of 1986 (ECPA)
- Added the “equal consideration clause” to Section 4(e)
- Added Section 10(j) giving Fish and Wildlife Agency recommendations greater weight

| | Pre-ECPA | Post-ECPA | | | |
|---|---|---|---|---|---|
| | 1980-86 | 1987-90 | 1991-94 | 1995 | 1996 |
| Projects | 531 | 259 | 71 | 14 | 1 |
| Capacity (MW) | 1,782 | 1,546 | 528 | 76.6 | 0.4 |

**New hydroelectric projects placed in service**
(Source: Hunt and Hunt 1997)

# Energy Policy Act of 2005

- Section 241 - required Departments of Interior, Commerce, and Agriculture, in consultation with FERC, to establish procedures for trial-type expedited proceedings for mandatory conditions
- Added new Section 33 to the Federal Power Act, which allows applicant or other party to license proceeding to propose an alternative condition to an agency prescription
- Agency involved must accept proposed alternative if the agency determines based on substantial evidence:
  - That the alternative condition provides for adequate protection and utilization of the resource and will be no less protective than that initially prescribed
  - That the alternative will cost significantly less to implement or result in improved operation of the project works for energy generation
- Process includes strict timeframes for resolution

# Other Federal Statutes Affecting Hydropower Projects

# Other Major Statutes Affecting Hydropower Licensing

- **National Environmental Policy Act** – Requires FERC to prepare an environmental report, in coordination with other agencies, about the environmental impacts of licensing a project and of alternatives to the project, and to consider impacts and alternatives when making licensing and exemption decisions
- **National Historic Preservation Act (Section 106)** – requires FERC to consider the effects of licensing or exempting a project on historic properties
- **Coastal Zone Management Act** – approval of state Coastal Zone Management Program required for all projects within or that would influence the coastal zone
- **Wild and Scenic Rivers Act** (Section 7(a)) – Preserves designated rivers in free-flowing state (i.e., FERC license or exemption prohibited)
- **Wilderness Act** – Prohibits establishment of power projects or facilities in designated wilderness areas

# Other Major Statutes Affecting Hydropower Licensing, *continued*

- **Fish and Wildlife Coordination Act** – Requires FERC to consult with USFWS, NOAA-Fisheries, and state fish and wildlife agencies before issuing license or exemption and to fully consider the recommendations of these agencies
- **Magnuson-Stevens Fishery Conservation and Management Act** – Gives NOAA-Fisheries authority over all anadromous fish throughout their migratory ranges.
- **Endangered Species Act** – Requires FERC to consult with USFWS and/or NOAA-Fisheries before issuing a license or exemption to ensure that the action is not likely to jeopardize the continued existence of a listed species or critical habitat
- **Clean Water Act** – requires that a Project obtain a water quality certificate from the state in which a "discharge" occurs, and allows the State to condition the license related to water quality and other relevant provisions of State law.

# Section 401 of the Clean Water Act (33 U.S.C. §1341)

- **Section 401**
  - Water quality certification from the state is required before federal license or permit issued for any activity that may result in a discharge into intrastate navigable waters.
  - Certification must establish effluent and "other" limitations included, which then become conditions of the federal license, "necessary to assure that any applicant. . .will comply with any applicable effluent limitations and other limitations. . .and with any other appropriate requirement of State law set forth in such certification."
  - FERC Order No. 464 established deadline for states to act on request for 401 WQC within one year of application filed or else considered waived

# Endangered Species Act

- **Section 7**
  - Directs federal agencies, in consultation with the Department of Interior or Commerce, to ensure their actions do not jeopardize listed species or adversely modify critical habitat
  - Requires federal agencies to develop and carry out programs to conserve threatened and endangered species
  - Applies to federal approval of non-federal activities (e.g., permits or licenses)
- **USFWS** responsible for freshwater and terrestrial species
- **NOAA-Fisheries** responsible for marine and anadromous species
- Number of formal consultations between FERC and agencies with jurisdiction over listed species has increased in response to additional listings
  - 31 formal consultations between 1973-1998
  - 29 formal consultations between 1999-2001

# Recent Court Cases Affecting Hydropower and the Federal Power Act

# Section 401 of the Clean Water Act

- ***PUD No. 1 of Jefferson County v. Washington Department of Ecology*** (511 U.S. 700 (1994))
  - Washington Department of Ecology issued §401 water quality certification for a proposed project imposing minimum stream flow requirement to protect salmon and steelhead runs
  - Under state's water quality standards, river of interest classified as AA, with uses including fish migration, rearing, and spawning
  - Court found minimum flow requirements to be permissible conditions of a §401 certification
  - Water quality standards contain two components: designated uses and water quality criteria based upon such uses.
    - State may include minimum flow requirements in §401 certification as needed to enforce designated use contained in a state water quality standard.
  - Supreme Court ruled that this did not conflict with FERC licensing authority

# Section 401 of the Clean Water Act

*continued*

- ***American Rivers, Inc. and the State of Vermont v. FERC*** (129 F.3d 99 (1997))
  - FERC does not have the authority to determine the validity of state water quality certification conditions or to exclude them from a license
  - [Like Section 4(e) conditions and Section 18 prescriptions] States' authority under §401 may be circumscribed by applicant's challenge of a §401 certification in a court of appropriate jurisdiction or FERC's refusal to issue a license with the offending conditions
- ***S.D. Warren Co. v. Maine Board of Environmental Protection*** (547 U.S. 370 (2006))
  - Petitioner claimed that constructed hydroelectric projects at dams do not result in a "discharge" under §401
  - Court held that because a dam "raises a potential for a discharge, §401 is triggered and state certification is required"
  - "Because the alteration of water quality as thus defined is a risk inherent in limiting river flow and releasing water through turbines, changes in the river's flow, movement, and circulation" fall within a State's authority under §401

# Section 404 of the Clean Water Act

- **Section 404** (33 U.S.C. § 1344)
  - Discharges of dredged or fill material (associated with project construction) into water or wetlands of the U.S. requires authorization of the Army Corps of Engineers
  - Unlike Section 401 certification, FERC may issue a license before a Section 404 permit is granted
- ***Monongahela Power Co. v. Marsh*** (809 F.2d 41 (D.C. Cir. 1987))
  - Court upheld Army Corps of Engineers' decision to deny a Section 404 permit to a FERC-licensed project

# Section 4(e) (16 U.S.C. §797(e))

- ***Escondido Mutual Water Co. v. LaJolla Indians*** (466 U.S. 765 (1984))
  - FERC has no authority to reject 4(e) conditions prescribed by an agency with mandatory conditioning authority under Section 4(e) in a hydropower license
  - 4(e) conditions must be necessary for the adequate protection and utilization of a federal reservation. A court will uphold conditions that are reasonably related to that goal and supported by substantial evidence.
- ***Wisconsin Valley Improvement Co. v.* FERC** (236 F.3d (D.C. Cir. 2001))
  - Upheld resource agencies' mandatory conditioning authority
  - Court ruled that federal land management agencies' Section 4(e) ability to affect a project's operation extended to areas outside of the boundaries of federal lands, if the agency administers lands within the Project Boundary

# Circuit Court of Appeals Decision Deals Another Blow to FERC and Licensees

- ***City of Tacoma, Washington v. FERC*** (460 F.3d 53 (D.C. Cir. 2006))
  - Relicensing process for Tacoma's Cushman Project began in 1974, and the new license wasn't issued until 1998
- Major Rulings:
  - FERC may not dictate deadlines for conditioning agencies under Section 4(e) or Section 18
  - Upheld Department of Interior's Biological Opinions, even though relied on inferences and not observations – "the agencies have a very low bar to meet"
  - FERC may issue an uneconomic license, and environmental concerns may prevail at the cost of shutting down a project
  - Interior may impose license conditions affecting the entire Project if ***any*** reservation lands are occupied by the Project

# Section 18 (16 U.S.C. §811)

- ***Wisconsin Valley*** decision drew from ***Bangor Hydro-electric v. FERC*** (78 F.3d 659 (D.C. Cir. 1996)), in which the Appellate Court ruled:
  - 4(e) conditions will be sustained by the court if they are consistent with the Federal Power Act and supported by the evidence presented to FERC
  - In this case, the Department of Interior's Section 18 fishway prescription was denied on the grounds that it lacked substantial evidence

# Section 18 *continued*

- ***American Rivers v. FERC*** (201 F.3d 1186 (9th Cir., 2000))
  - Coalition of environmental organizations and the Oregon Department of Fish and Wildlife challenged issuance of a license, partly on the grounds that FERC violated Sections 10(j) and 18 of the Federal Power Act
  - Court ruled that FERC may not reject a "fishway prescription" proposed by the Department of Interior or Commerce under Section 18 of the Federal Power Act
  - Decision also upheld FERC's interpretation of ECPA that under Section 10(j) FERC has discretion as to how or whether a 10(j) recommendation is incorporated into a license

# Section 10(j) (16 U.S.C.§ 803(j))

- ***City of Centralia, Washington v. FERC*** (213 F.3d 742 (D.C. Cir. 2000))
  - FERC issued license order rejecting an agency's Section 10(j) recommendation that the licensee build a tailrace barrier, but accepted the recommendation that the licensee be required to conduct a study on the potential need for a tailrace barrier
  - License order stated that the incremental benefits of the barrier were not demonstrated sufficiently to justify its cost, but agreed with agency that a study is needed to determine how many fish or injured by the turbine blades
  - FERC must provide reasonable support (substantial evidence) for an environmental measure or study to determine the feasibility of an environmental measure
  - ECPA does not give environmental factors preemptive force; FERC must still balance power and non-power values, and Section 10(j) agencies do not have veto power

# Section 10(j), *continued*

- Compensation for fish entrainment: ***City of New Martinsville v. FERC*** **(102 F.3d 567 (D.C. Cir. 1996))**
  - Perceived risk of gizzard shad entrainment (forage, not game species)
  - FERC lacked authority to impose costs on the licensee for non-game fish, and FERC had not established that gizzard shad entrainment threatened game fish populations
  - "The mere fact of uncertainty does not. . . give the Commission unlimited power to issue orders requiring whatever compensation it deems proper. The Commission must still demonstrate. . . adverse impacts on fish populations."

# Section 10(j), *continued*

- Conservation Law Foundation v. FERC (216 F.3d 41 (D.C. Cir. 2000))
- License did not include Department of Interior's recommended minimum instream flows to the bypass channel
- Minimum flows would have increased annual power expenses for mills by nearly $1 million and would have only provided a modest fisheries benefit
- Circuit Court of Appeals affirmed that FERC had adequately considered various factors in this decision
- Court affirmed that the Federal Power Act does not require FERC to assign a monetary value to nonpower benefits.

# Summary of Two Decades of Change

- FERC's authority has diminished; resource agencies elevated
- FERC has adjusted to its new reality and focused on what it can do [process improvements and lower costs]
- NGOs have become very adept at actively participating in the licensing process

# The Shifting Regulatory Landscape

# The Traditional Licensing Process and the Class of '93

- Further evolution of the licensing process as the result of experiences stemming from the "Class of '93"
- New environmental protection laws and regulations and licensing-savvy resource agencies and non-governmental organizations
- Licensing proceeded according to the three-stage consultation process established in the 1980s
  - Now known as the ***Traditional Licensing Process*** (TLP)
  - Characteristics of the TLP:
    - Sequential (not parallel) consultation process and NEPA environmental review process

# The Rise of Settlement Agreements

- License applicants, resource agencies, and other stakeholders increasingly resorted to multiple-year negotiations that culminated with a Settlement Agreement
- Protection, mitigation, and enhancement measures agreed upon in a Settlement Agreement were then generally issued as license conditions by FERC
- FERC's policies for settlement agreements have matured since this time
  - 2006 Policy Statement on Hydropower Licensing Settlements (116 FERC  61,270)
  - Increased scrutiny of settlement provisions
    - Must be based on factual evidence and related to project effects or purposes
    - Must be enforceable

# Evolution of the Integrated Licensing Process (ILP)

- 1998: FERC, EPA, and Departments of Interior, Commerce, and Agriculture formed the Interagency Task Force to Improve Hydroelectric Licensing Processes
- 2002 ILP collaborative rulemaking process characterized by extensive input from federal and state agencies, NGOs, and Tribes
- Final rule issued in 2003, and ILP became the default licensing process 2 years later (July 2005)
- Goals of the ILP
  - Improve process efficiency, predictability, and timeliness (i.e., time it takes FERC to issue a license after an application is filed)
  - Limit post-application studies
  - Improve quality of decision making

# ILP *continued*

- Reality of ILP
  - "Front-end loaded" process
  - FERC Study Plan Determination
  - Some agencies aren't playing by the rules
  - Offers several strategic opportunities for license applicants
  - Emphasis on "Integrated" in the ILP

# The FERC Licensing Process

- Preliminary Permit (up to 3 years to develop project concept and prepare license documentation)
- Pre-application Document and Notice of Intent (starts the formal licensing process)
- Studies and Consultation
- License Application Filing
- FERC NEPA Review
- Agency Conditions
- Request Water Quality Certificate
- DEIS
- Receive Water Quality Certificate
- FEIS
- License Issuance

# Benefits of the ILP

- Concurrent NEPA scoping activities
- Early FERC staff assistance
- Strict process plan and schedule (i.e., well-defined timeframes)
- Early study plan development with dispute resolution process
- Reduced potential for post-application studies
- Enhanced Tribal consultation

# Environmental Considerations

# Key Environmental Factors for Susitna

- Federal lands
- Listed species
- Critical habitat
- Wilderness areas
- Wild and Scenic Rivers
- State water quality standards
- Alternatives
- Downstream effects
- Salmon

# Susitna Land and Water Use Designations and Ownership

- No current Wild and Scenic River designations in Susitna basin (mainstem or tributaries)
  - Nearest W&S:  Gulkana and Delta rivers, unaffected by Susitna Project
- No current wilderness designations in Susitna Project area
- Ownership in general Project vicinity (285.2 sq. mi.):
  - BLM: 51.0 sq. mi.
  - Native Corporation: 148.4 sq. mi.
  - State: 85.8 sq. mi.
  - Private: (0.12 sq. mi.)
- Similar ownership and use patterns reported in 1983

# Endangered Species – 1983 License Application

- No ESA-listed fish, wildlife, botanical resources in Project area at time of application
- Limited discussion in application of effects on species well outside the Project footprint; no Section 7 consultation
- FERC DEIS focused on (unlisted) anadromous and resident fish use of mainstem Susitna River; big game use of impoundment zone
- **Endangered Species – Current Considerations**
- No current known occurrences of ESA-listed species in Project vicinity
- No critical habitat designations in Project vicinity
- 12 Endangered, 6 Threatened, 6 petitioned or Candidate species in Alaska
  - No listings of inland species or anadromous fish
  - Cook Inlet Beluga whale most recent listing (Oct 17 2008)

# Key Environmental Topics – 1983 License Application

- **Fisheries**
  - Migration barrier apparent near Devil Canyon (due to high velocities; some Chinook observed to pass upstream)
  - Downstream effects analysis estimated salmon losses related to altered flow regimes upstream of Talkeetna River confluence
  - Resident fish effects analysis estimated losses in impoundment areas and adjacent tributaries (focus on Arctic grayling)
  - No analyses of lower-river effects (downstream of Talkeetna confluence). Lower river supports majority of fisheries production
  - No habitat modeling (e.g., Instream Flow Incremental Methodology)
  - Proposed mitigation: dissolved-gas measures; consideration of modified operations, habitat improvements (e.g., removal of barriers), hatchery construction, compensation. No plans beyond conceptual stage

# Key Environmental Topics – 1983 License Application

- **Wildlife**
  - Big game and furbearer focus (moose, caribou, wolf, wolverine, bear, dall sheep)
  - Bald eagle, golden eagle, raven primary avian focus
  - Impoundment intersects caribou migration route; expected loss of moose, bear, dall sheep in Project-affected area
  - Habitat management proposed as mitigation for impacts to mammals and habitats (e.g., controlled burns to increase moose browse). No plans beyond conceptual stage
- **Water Quality**
  - Existing conditions on mainstem Susitna included measured exceedences for 26 parameters, none anthropogenic in origin (e.g., total organic carbon, from tundra)
  - Effects of Susitna project on temperatures, ice flow, turbidity assessed with modeling software; lower Susitna addressed only peripherally

# In Conclusion

- A great deal has changed
- Some positives ~ some negatives
- Pay attention to the regulatory and environmental areas from the outset