



Preliminary Results of Environmental Review Millstone Power Station, Units 2 & 3

Nuclear Regulatory Commission
January 11, 2011



Purpose of Today's Meeting

- > Discuss NRC's license renewal process
- > Describe the environmental review process
- > Discuss the results of our review
- > Provide the review schedule
- > Accept any comments you may have today
- > Describe how to submit comments



Millstone Power Station, Units 2 and 3 License Renewal

- > Operating licenses expire in 2015 and 2025, respectively
- > Application requests authorization to operate Millstone Power Station for up to an additional 20 years

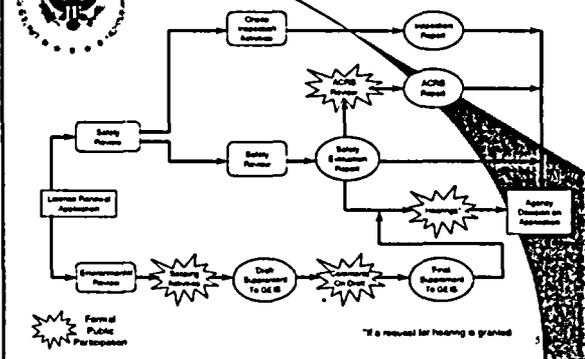


NRC's License Renewal Review

- > Safety review
- > Environmental review
- > Plant inspections
- > Advisory Committee on Reactor Safeguards (ACRS)



License Renewal Process





National Environmental Policy Act

- > NEPA requires Federal agencies to use a systematic approach to consider environmental impacts
- > Commission has determined that an environmental impact statement (EIS) will be prepared for a license renewal action

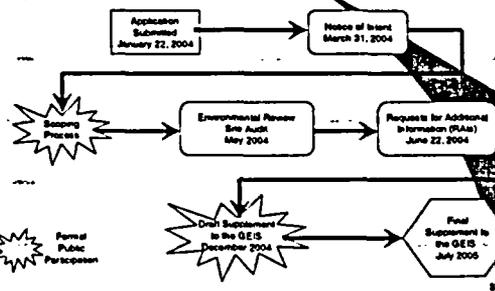


Decision Standard for Environmental Review

To determine whether or not the adverse environmental impacts of license renewal for Millstone, Units 2 and 3 are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.

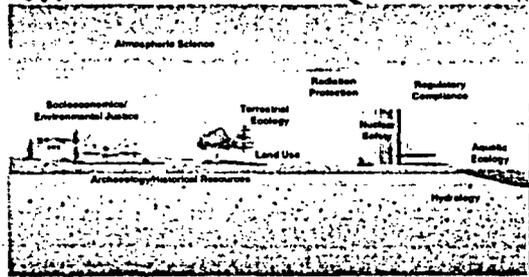


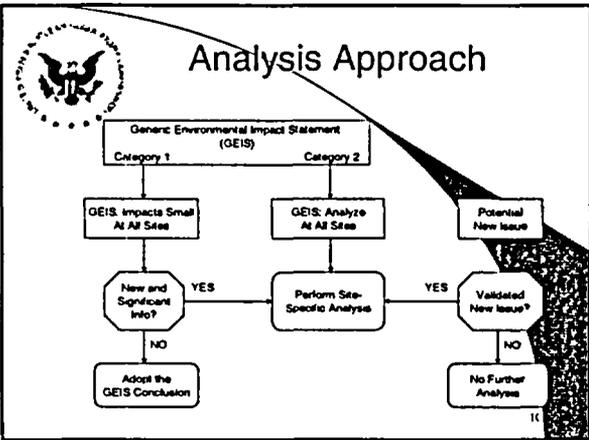
Environmental License Renewal Process

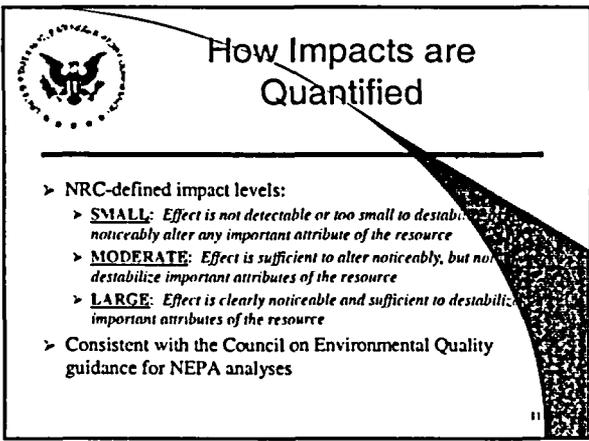


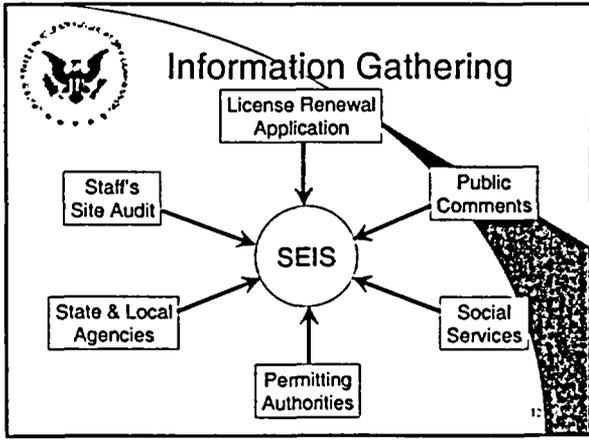


Team Expertise











Environmental Impacts of Operation

- > Cooling System & Aquatic Resources
- > Transmission Lines
- > Radiological
- > Socioeconomic
- > Groundwater Use and Quality
- > Threatened or Endangered Species

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Cooling System Impacts



- > **Entrainment**
 - > Impact on winter flounder larvae MODERATE
 - > Many factors affecting trends
 - > Uncertainty in extent of impact from Millstone
 - > Population low
 - > Impact on other species SMALL
- > **Impingement impact SMALL**
- > **Heat shock impact SMALL**
 - > No fish kills since 1972 after mitigations completed
 - > Complies with CTDEP National Pollutant Discharge Elimination System (NPDES) permit

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Transmission Lines



- > ~115 miles of corridors covering over 3000 acres
 - > Corridor impacts SMALL
- > **Electric shock from electromagnetic fields**
 - > Maximum induced currents below National Electrical Safety Code limits - impacts SMALL
- > **Health effects of chronic exposure to electromagnetic fields**
 - > National Institute of Environmental Health Sciences review concluded that health studies do not show sufficient evidence of risk to warrant concern - impact is not further characterized

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Radiological Impacts

- > Addresses exposures to the public and to workers
- > No Category 2 issues
- > No new and significant information
- > GEIS concluded impacts are SMALL

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Socioeconomics



- > **Housing and public utility impacts during operation**
 - > No discernable change in housing market
 - > Increase in water usage can be met with existing capacity
- > **Offsite land use and transportation**
 - > About five additional employees would not affect land use or road capacity
 - > Continuing property tax payments would not change county land use
- > **Historic and archaeological resources**
 - > Several known cultural resources at the site but not affected
- > **Environmental justice**
 - > All impacts were SMALL and not disproportionate, therefore impact is SMALL
- > **ALL IMPACTS SMALL**

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Groundwater Use and Quality



- > One well used to irrigate community ball fields (Less than 100 gpm of groundwater pumped)
- > Millstone uses 330,000 gpd of surface water (~5.2% of New London capacity)
- > Impacts are SMALL



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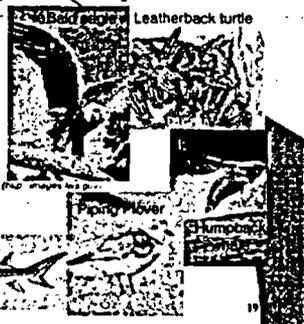


Threatened or Endangered Species

> Fourteen Federally listed species potentially in vicinity

> Informal Consultation with FWS and NOAA Fisheries initiated

> IMPACTS ARE SMALL





Potential New and Significant Information

- > No new and significant information identified:
 - > during scoping
 - > by the licensee
 - > by the NRC staff



Cumulative Impacts of Operation

- > Considered impacts of renewal term operations combined with other past, present, and reasonably foreseeable future actions
 - > evaluated to end of 20-year renewal term
 - > geographic boundaries dependent on resource
- > No significant cumulative impacts



Other Environmental Impacts Evaluated

- > Uranium Fuel Cycle and Solid Waste Management
- > Decommissioning

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Alternatives

- > No-action
- > New generation
- > Purchased electrical power
- > Alternative technologies
- > Combination of alternatives

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Preliminary Conclusions for Alternatives

- > Alternatives (including the no-action alternative) may have environmental effects in many impact categories that reach MODERATE or LARGE significance

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Postulated Accidents

- Design-basis accidents
- Severe accidents
 - Severe accident mitigation alternatives (SAMAs)

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SAMA Evaluation Process

- Characterize overall plant risk
- Identify potential improvements
- Quantify risk reduction potential and implementation costs
- Determine whether implementation of any of the improvements is required to support license renewal

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Preliminary Results of SAMA Evaluation

- 196 candidate improvements considered for Unit 2 and 185 for Unit 3
- Set of SAMAs reduced based on multi-step screening process (to 44 for Unit 2 and 52 for Unit 3)
- Detailed cost/benefit analysis shows that one SAMA would be cost-beneficial at Unit 2—"enhance procedures to prevent a seal LOCA upon loss of component cooling water"

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Preliminary Results of SAMA Evaluation

- Two additional SAMAs could be considered beneficial if they can be implemented without a hardware modification
 - enhance capability to recover diesel generator in a station blackout (Unit 2)
 - enhance local manual operation of auxiliary feedwater if control power is lost (Unit 3)



Preliminary Results of SAMA Evaluation

- Three SAMAs found to be potentially cost-beneficial
 - not related to managing the effects of aging
 - not required to be implemented as part of license renewal
 - Dominion plans to further evaluate these SAMAs and complete any implementation prior to the period of extended operation



Preliminary Conclusions

- Impacts of license renewal are **SMALL** for adjacent areas except entrainment of winter flounder larvae, which is **MODERATE**
- Impacts of alternatives to license renewal range from **SMALL** to **LARGE**
- The staff's preliminary recommendation is that the adverse environmental impacts of license renewal for Millstone are not so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable



Environmental Review Milestones

- > Draft EIS issued – 12/2/04
- > Comment period ends 03/02/05
- > Issuance of Final EIS – July 2005

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Point-of Contact and Reference Documents

- > Agency point of contact:
Richard L. Emch, Jr.
(800) 368-5642, Ext. 1590
- > Documents located at the Waterford Public Library, 43 Ferry Road, Waterford; or Three Rivers Community College, Thames River Campus Library, 574 New London Turnpike, Norwich, Connecticut
- > Draft SEIS can also be viewed at the NRC's Web site (www.nrc.gov) at: www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement2/

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Submitting Comments

- > By mail at: Chief, Rules Review and Directives Branch
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- > In person at: 11545 Rockville Pike
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- > E-mail at: MillstoneEIS@nrc.gov

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