

LICENSEE: Northeast Nuclear Energy Company, et al.

April 11, 2000

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FACILITY: Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3

SUBJECT: MEETING SUMMARY FOR DECEMBER 8, 1999, PUBLIC MEETING WITH
NORTHEAST NUCLEAR ENERGY COMPANY TO DISCUSS DESIGN
STRATEGY AND LICENSING IMPLICATIONS FOR REMOVING MILLSTONE
UNIT 2 RELIANCE ON MILLSTONE UNIT 1 FOR 4160-VOLT POWER

On December 8, 1999, the U.S. Nuclear Regulatory Commission (NRC) staff participated in a public meeting with Northeast Nuclear Energy Co., et al. (NNECO). The meeting was open for public observation. The purpose of the meeting was for NNECO to provide the NRC staff with 1) a brief overview of the projects to segregate Millstone Unit 1 from Millstone Units 2 and 3, and 2) the design strategy for removing Millstone Unit 2's reliance on Millstone Unit 1 for 4160 volt power.

Enclosure 1 provides a list of attendees. Enclosure 2 is NNECO's handouts used during the meeting.

/RA/

Jacob I. Zimmerman, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-245, 50-336, and 50-423

Enclosures: As stated (2)

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

April 11, 2000

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Millstone Nuclear Power Station
Units 2 and 3

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LIST OF ATTENDEES
Millstone Units 1, 2, and 3
December 8, 1999 - 1:00 p.m.

NAME	ORGANIZATION	POSITION
R. Eaton	USNRC/NRR/DLPM/PDI-2	Senior Project Manager - Millstone Unit 2
D. Wheeler	USNRC/NRR/DLPM/PDIV-3	Senior Project Manager - Millstone Unit 1
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N. Madden	Northeast Utilities	Project Manager
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T. Cleary	Northeast Utilities	Senior Licensing Engineer
H. McKenney	Northeast Utilities	Fire Protection Engineering Supervisor
S. Day	Northeast Utilities	MP1 Regulatory Affairs
R. MacIntosh	Northeast Utilities	Regulatory Affairs

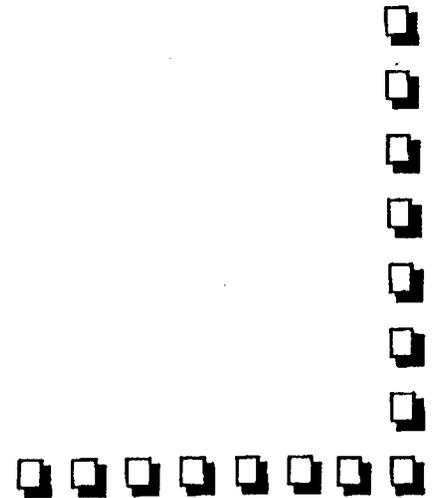
MP2/3 4160V

Cross-Tie

Project

ENCLOSURE 2

12/06/1999



Millstone 2/Millstone 3 4160 Volt Cross-tie

Agenda

Introduction - Tom Cleary

Brief Overview of the Projects to Segregate Millstone 1 from Millstone 2 & 3 - Neal Madden

Design Strategy for Removing Millstone 2 Reliance on Millstone 1 for 4160 Volt Power - Gil Olsen

Licensing Implications

Appendix R - Hugh McKenney

Station Blackout - Gil Olsen

GDC 17 - Gil Olsen

GDC 5 - Gil Olsen

Schedule - Tom Cleary



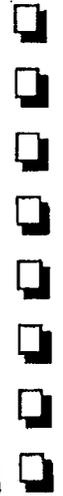
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Cross Tie Project Scope Summary

- **Repowering of MP1 Firepump House**
- **Stack Flow Provisions**
- **4160 Volt Cross Tie**
- **U1 Master Supervisory Panel Repower (345KV Breaker Control)**
- **U3 Auxiliary Steam supply to Unit 2**
- **Hydrogen Separation**
- **U3 Station Air Cross-Tie to U2**
- **Building 110/Common Area HVAC**
- **Chemistry Lab Floor Drains**
- **Common Facility Fire Hose Stations**
- **Repowering of Common Facility Fire Detection System**
- **Miscellaneous 480 Volt Services (Common Facility)**
- **Separation and Repowering of MP2 Communications System's**
- **Lighting and Miscellaneous Panel Loads (Common Facility)**
- **Domestic Water/Demineralized Water (Common Facility)**
- **Repowering of the Water Quality Monitoring System**
- **U1 Security Duress Alarm to U3**

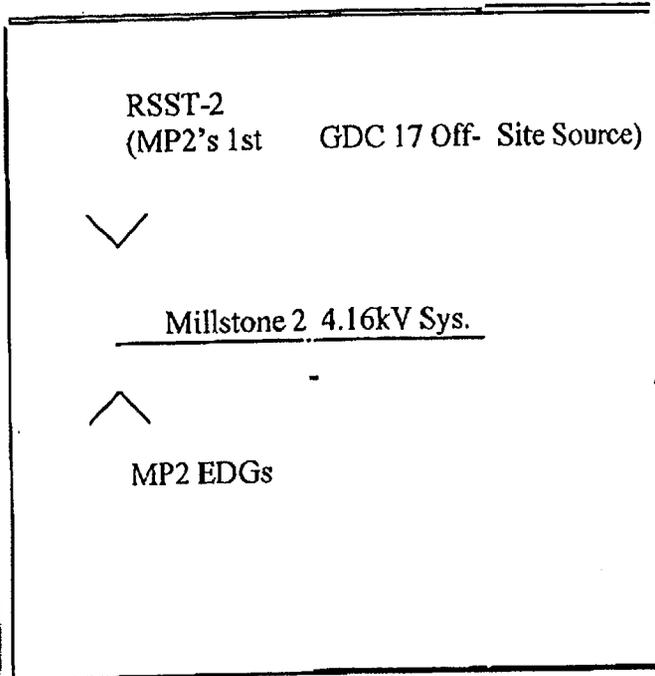
MP2/3 4160V Cross-Tie Project Design Strategy

<u>Aspect</u>	<u>Before</u>	<u>After</u>
<u>GDC 17</u>	MP1 RSST or NSST	MP3 NSST or RSST
<u>SBO</u>	MP1 EDG	MP3 SBO DG
<u>App. R</u>	MP1 EDG	MP3 SBO DG
	NRC Licensing Aspects	

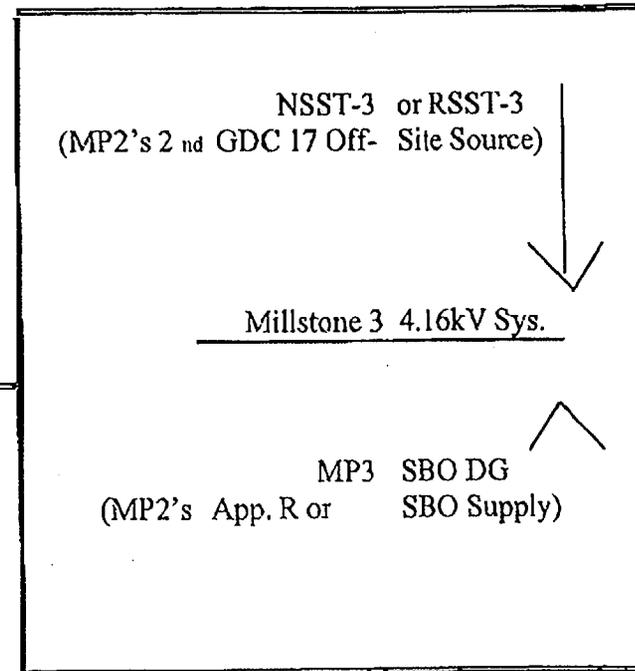


MP2/3 4160V Cross-Tie Project - Design Strategy

Millstone 2



Millstone 3

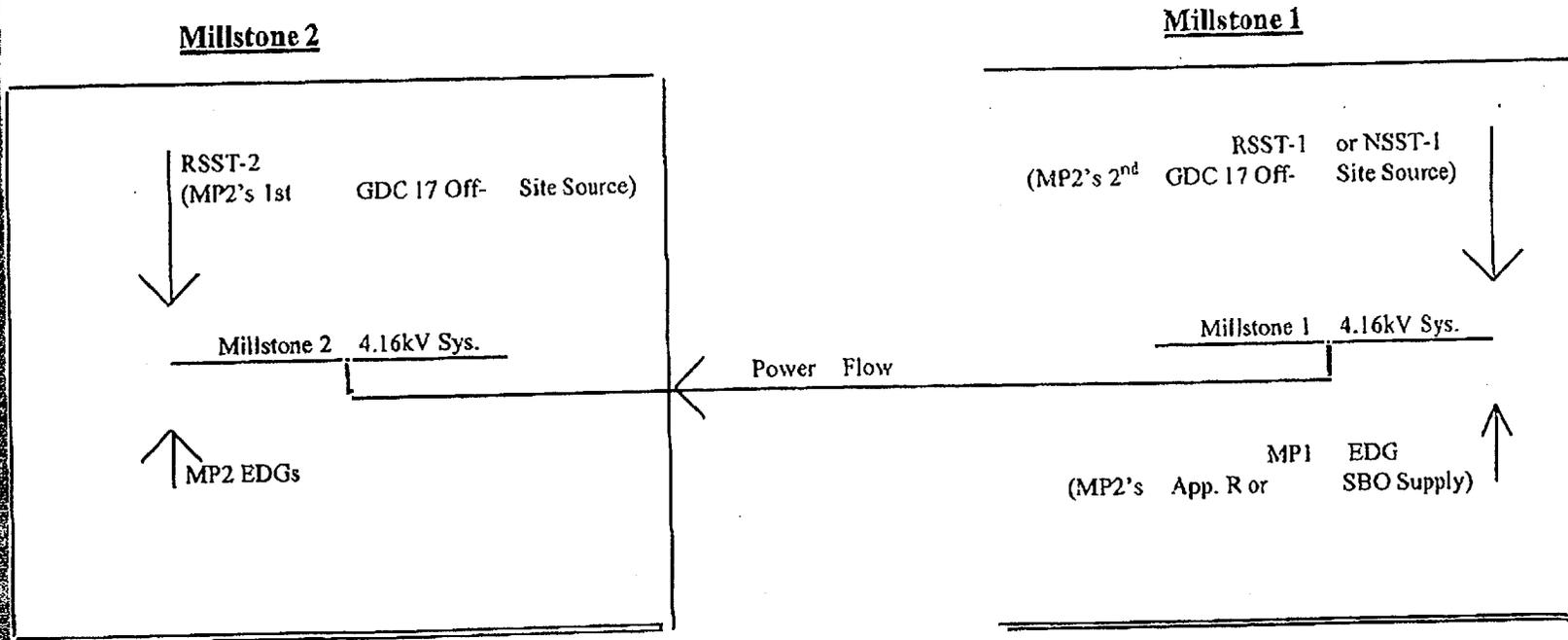


Power Flow

Conceptual One-Line Diagram (After Changes)

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MP2/3 4160V Cross-Tie Project - Design Strategy



Conceptual One-Line Diagram (Before Changes)

Applicable Appendix R Regulations and Millstone Unit 2 SER's

- III.G.3.A “Alternate or dedicated shutdown capability, and its associated circuits, independent of cables, systems or components in the area, room or zone under consideration, shall be provided....
-In addition, fire detection and a fixed fire suppression system shall be installed in the area, room or zone under consideration”
- III.L-Alternate or dedicated shutdown capability
-Section 4 requires an independent onsite power system if power can not be supplied by both onsite and offsite power systems due to fire damage
- SER, dated July 17, 1990 - Acceptance of Appendix R shutdown analysis
- SER, dated March 16, 1999 - Exemption in the yard area from APP. R Section III.J to the extent that it requires 8-hour emergency lighting with an 8-hour battery supply



Unit 2 Appendix R Shutdown Strategy

- Analyses for several fire area scenarios indicate that the potential exists for loss of both Unit 2 EDG's
- Power from Millstone Unit 1 was credited to "Backfeed" the Unit 2 buses to mitigate these potential malfunctions
- 1990 SER reviewed and accepted this shutdown strategy
- Three fire areas are designated as alternate shutdown areas due to this "Backfeed" configuration
 - Intake Structure
 - East 480 Volt Switchgear Room
 - Control Room



Initial USQ Assessment

- Early assessment indicates that the proposed change is **not** a USQ
- Unit 3 SBO EDG will meet the requirements of Appendix R III.L to provide an independent power system
- Review of Unit 2 Appendix R SER's indicate that no margin of safety is being reduced
 - Power from either Unit 1 or 3 is independent from Unit 2 and is not affected by fire damage
 - SBO EDG has better reliability and availability over the last two years than the Unit 1 EDG

Unit 2 Exemptions

Two exemptions (intake structure and the east 480 volt switchgear room) were required because these areas did not meet III.G.3 requirements to the extent that it requires fixed fire suppression

These exemptions were approved based upon:

Combustible loading and its configuration

Administrative controls limiting transient combustibles

Existing fire detection systems

Expected brigade response

Plant's ability to shutdown via backfeed

These exemptions are still valid and not affected by the proposed change as the justification for the exemptions are not being changed.

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Additional Exemption Required For Appendix R Section III.J

- A new exemption must be processed for access/egress to the Unit 3 SBO Diesel as this is an "Operator Action" for a Unit 2 Appendix R safe shutdown event.
- Exemption is required as the Unit 2 yard does not meet the requirement of III.J to the extent that it requires 8-hour emergency lighting with an 8-hour battery supply
- Unit 2 currently has a similar exemption to Section III.J for access to the Unit 1 backfeed cross tie bus, the intake structure and the RWST pipe chase.
- The new exemption request will provide similar justification as the currently approved exemption-based upon the availability of the Millstone site security system lighting.



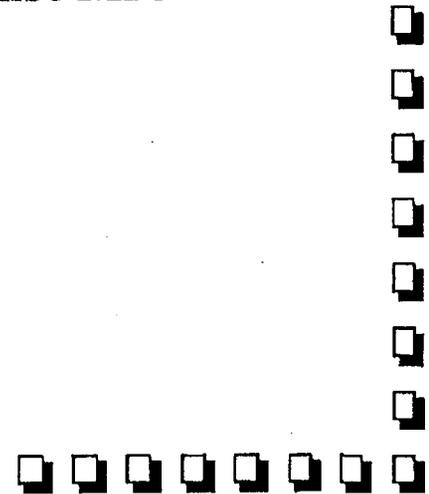
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MP2/3 4160V Cross-Tie Project

Revised Licensing Basis (MP2 & MP3)

- Provide Cross-Tied MP3 NSST or RSST as the 2nd Source for MP2
- MP2 Imposes Additional 3MVA on MP3
- GDC 5 Satisfied as long as MP2 Load does not Compromise MP3

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MP2/3 4160V Cross-Tie Project

Millstone Unit No. 3 Licensing Basis

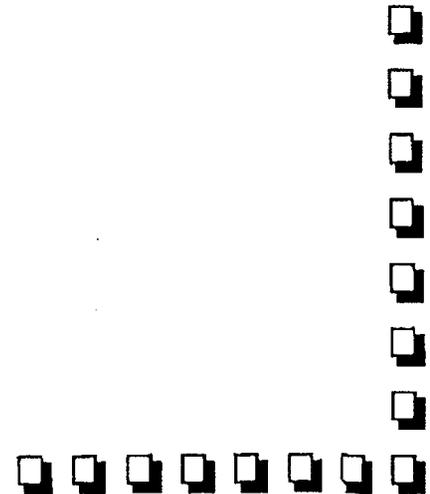
- GDC 17 - Requires Two Independent Off-Site Power Connections
- MP3 Credits the MP3 NSST as 1st Off-Site Source
- MP3 RSST Credited as the 2nd Off-Site Source
- GDC 5 - Sharing of "Systems Important to Safety" includes the Millstone Switchyard



MP2/3 4160V Cross-Tie Project

Millstone Unit No. 2 Licensing Basis

- GDC 17-Requires Two Independent Off-Site Power Connections
- MP2 Credits the MP2 RSST as 1st Off-Site Source
- MP1 NSST or RSST Credited as the 2nd Off-Site Source



MP2/3 4160V Cross-Tie Project

Millstone Unit No. 3 Design Basis

- MP3 Design Basis Involves Min/Max Load Flows for Voltage Variation
- MP3 Elec. System was Optimized using Conservative Load Assumptions prior to Start-Up
- MP3 SER Evaluated 21 Design Aspects
- MP3 SER Discussed Analytical "Margin" between Normal and Degraded Voltage Conditions
- MP3 Operating Experience has shown Adequate Margin to Offset the 3MVA (MP2 Load) to not Impact the SER Margin

NRC Licensing Aspect - GDC 17

12/06/1999

MP2/3 4160V Cross-Tie Project

- Both MP2 & MP3 8-Hour Coping Plants
- MP3 SBO DG will be Considered an "Alternate AC Source" per 10CFR50.63.c.2 for MP2 and MP3
- MP3 SBO DG is Self Contained Unit - not Associated with Emergency Diesel Generators

NRC Licensing Aspect - SBO

