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NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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Docket No. 50-245
A01640

Director of Nuclear Reactor Regulation
Attn: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: (1) D. M. Crutchfield letter to W. G. Counsil, dated January 31, 1981.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1
SEP Topic VI-7.C.1; Independence of Redundant
Onsite Power Systems

In Reference (1), the Staff forwarded the draft evaluation for SEP Topic VI-7.C.1 for Millstone Unit No. 1. Northeast Nuclear Energy Company (NNECO) was requested to review the draft evaluation and inform the Staff of differences between Millstone Unit No. 1 and the licensing basis used in the Staff's evaluation. Accordingly, NNECO hereby provides the following comments.

AC Systems

Section 3.1 of the Staff's evaluation should be revised to read as follows:

> Millstone Unit No. 1 emergency AC power is provided by a gas turbine generator (GTG) and a diesel generator (DG). The GTG supplies buses 7, 1, 3, and 5 upon loss of normal power. The DG supplies bus 6. The tie breakers between the DG and bus 5 as well as bus 7 and 4 are lowered and padlocked out. The tie breaker between bus 4 and 6 is tripped, locked out, and alarmed in the control room for a LNP. Thus, at the 4KV level the GTG and DG cannot be automatically paralleled or manually closed without defeating the lockout.
>
> Millstone Unit No. 1 has four main 480V buses; nos. 1, 1A, 2 and 2A, which are supplied by 4KV buses 3, 4, 5, and 6 respectively. Buses 1 and 1A are not classified as safety buses, however, bus 1 feeder breaker does not trip on LNP, while the bus 1 to 1A tie breaker does, if it was closed at the time. Also, bus 1 has the following loads which do not shed upon initiation of LNP:
>
> 1. Feed to turbine building MCC 1-2
> 2. Feed to turbine building MCC 1-3
> 3. Feed to station air compressor
> 4. Feed to turbine building crane
> 5. Feed to fire pump house MCC 22A-2 thru an auto bus transfer switch which has an alternate feed from bus 1A.

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Buses 2 and 2A have a tie breaker which is removed from its compartment and stored at another location. Thus bus 2 is served from 4KV bus 5 (GTG) and bus 2A from 4KV bus 6 (DG) without automatic paralleling. Manual transfer can be accomplished only after defeating this interlock.

The 120V AC vital bus is supplied as described in the evaluation except a third source via an auto-transfer switch from the DG is provided directly to the bus.

The 120V AC instrument bus is supplied by an automatic transfer device receiving power from MCC 2 - 4 (normal) or 2A - 5 (emergency). These MCC's are supplied from 480V Load Centers 2 and 2A respectively. MCC's 2 - 3NE, 2A - 3NE and 22A - 1 are also supplied from these same load centers thru an auto-transfer switch, while MCC 22A-3 is supplied from these buses thru a key interlocked transfer switch.

The reactor protection system buses 1 and 1A are supplied from MCC 2-5 (GTG) and 2A - 5 (DG) respectively. A manual tie breaker at each bus is provided with a mechanical interlock.

DC Systems

The DC systems at Millstone Unit No. 1 utilize manual transfer switches as follows.

The main DC buses DC-1 and DC-1A are manually tied via a breaker on each bus. These breakers are normally open and administratively controlled.

The feeders to DC MCC's DC-11A-1, 2 and 3, are thru manual operated transfer switches which are administratively controlled.

The battery chargers are fed from MCC's 2 - 5 (GTG) and 2A - 4 (DG) respectively. The swing charger, fed from MCC 2A - 5 (DG) is provided with manual, mechanical interlocked transfer.

The DC control circuits to the 4KV switchgear, 480V Load Center and Control Room DC distribution panels, all use manual transfer switches, also administratively controlled.

Although Regulatory Guide 1.6 recommends interlocks to satisfy the operator error criteria, NNECO has concluded that administrative controls are adequate to meet the intent of Regulatory Guide 1.6. A problem with any DC system is alarmed in the control room. If a problem is alarmed, it will be investigated before any action is taken. The first action would be to restore the normal source. If the normal source cannot be restored, the reason for the problem would be determined, and the ability to transfer the source would be reviewed. Only after these steps have been taken would a transfer be made, after the normally open breaker supplying the emergency feeder is closed. To further insure against operator error, Millstone Unit No. 1 operates with the emergency transfer source de-energized.

The entire transfer process would be performed under the direct control of the shift supervisor. If the transfer switches were ganged in a common location, an interlock could deter the operator from operating the wrong switch, however,

the transfer switches are located throughout the plant at the devices or buses being controlled. Thus, the addition of another interlock is superfluous.

Therefore, NNECO has concluded that for all sources other than the 120V AC and MCC's, the objective of Topic VI-7.C.1 is satisfied.

We trust these comments will be appropriately incorporated into a revised evaluation for this SEP topic.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

W. G. Counsil
Senior Vice President