Docket No. 50-245
B13400

Attachment 1

Millstone Nuclear Power Station, Unit No. 1

Proposed Changes to Technical Specifications

November 1989

5.0 DESIGN FEATURES

5.1 Site

The Unit 1 reactor building is located on the site at Millstone Point in Waterford, Connecticut. The nearest site boundary on land is 2063 feet northeast of the reactor building (1620 feet northeast of the elevated stack), which is the minimum distance to the boundary of the exclusion area as described in 10 CFR 100.3(a). No part of the site that is closer to the reactor building than 2063 feet shall be sold or leased except to The Connecticut Light and Power Company, Western Massachusetts Electric Company or the Northeast Nuclear Energy Company or their corporate affiliates for use in conjunction with normal utility operations.

5.2 Reactor

A. The core shall consist of 580 fuel assemblies.

B. The reactor core shall contain 145 cruciform-shaped control rods. The control material shall be hafnium and/or boron carbide powder (B_4C) compacted to approximately 70% of theoretical density.

5.3 Reactor Vessel

The reactor vessel shall be as described in Table IV-1 of the FSAR. The applicable design codes shall be as described in Table IV-1 of the FSAR.

5.4 Containment

A. The principal design parameters and applicable design codes for the primary containment shall be as given in Table V-1 of the FSAR.

B. The secondary containment shall be as described in Section V-3 of the FSAR and the applicable codes shall be as described in Section XII of the FSAR.

C. Penetrations to the primary containment and piping passing through such penetrations shall be designed in accordance with standards set forth in Section V-2 of the FSAR.

5.5 Fuel Storage

A. The new fuel storage facility shall be such that the K_{eff} dry is less than 0.90 and flooded is less than 0.95.

B. The K_{eff} of the spent fuel storage pool shall be less than or equal to 0.90. This K_{eff} value is satisfied if the minimum gadolinium loading in a minimum of three fuel rods per fuel assembly lattice-type versus the initial U-235 enrichment is within the acceptable region of Figure 5-1.

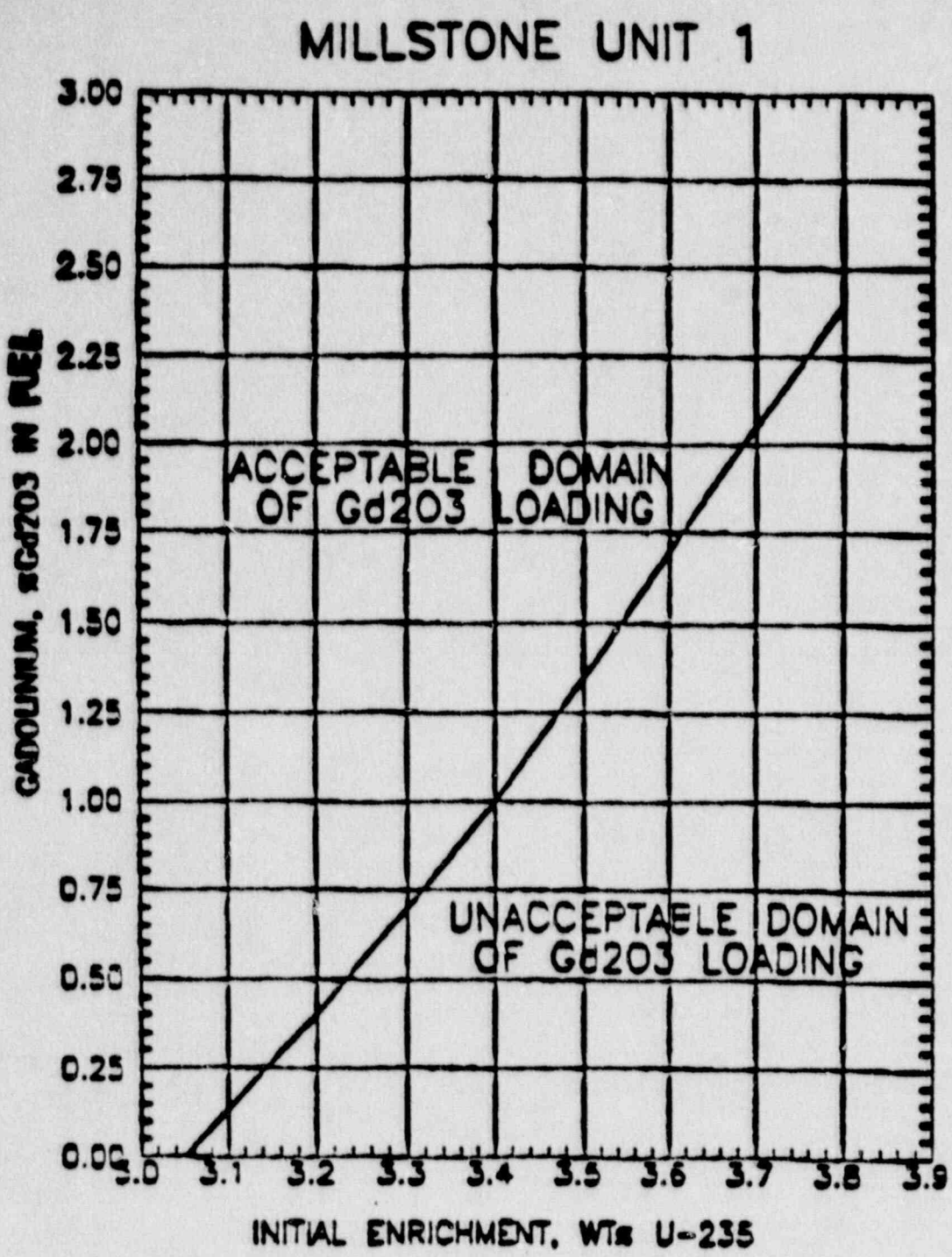

FIGURE 5-1 MINIMUM GADOLINIUM LOADING, AS Gd2O3, IN MINIMUM OF THREE FUEL RODS PER ASSEMBLY LATTICE-TYPE

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Attachment 2

Millstone Nuclear Power Station, Unit No. 1

Description of Proposed Changes to Technical Specifications

November 1989

Millstone Nuclear Power Station, Unit No. 1
Description of Proposed Changes to Technical Specifications

A. Description of Change

1. Section 5.5.B, Fuel Storage

This section has been revised to state that the K_{eff} of the spent fuel storage pool shall be less than or equal to 0.90 if the minimum gadolinium loading in a minimum of three fuel rods per fuel assembly lattice-type versus the initial U-235 enrichment is within the acceptable region of Figure 5-1.

2. Figure 5-1, Minimum Gadolinium Loading

This new Figure has been added to Section 5.0 to designate the acceptable gadolinium loadings per fuel type as referenced by revised Section 5.5.B.

B. Evaluation of Change

The proposed change described above provides an additional control in determining the acceptability of fuel storage based on gadolinium loading and fuel enrichment. All of the bundles currently stored in the Millstone Unit No. 1 spent fuel pool and in the reactor vessel meet the proposed new Technical Specification figure by a substantial margin. All other aspects of fuel storage (e.g., rack design, seismic considerations, heavy loads, thermal loading, etc.) have been previously addressed in our June 24, 1988 (Reference 1), submittal and the subsequent additional information submittals. This proposed change is fully consistent with those previously submitted.

Criticality in the spent fuel pool will be precluded as long as enrichment and gadolinium loadings meet the requirements of the new proposed figure. Thus, no negative impact can be expected on the consequences of any postulated accident. This change will not affect any safety systems and no increase in the probability of a criticality event can be postulated. In addition, this change will not modify plant response for any event to the point where it could be considered a new accident, no new failure modes are associated with this change, and no increase in the probability of any accident exists.

NNECO has reviewed the proposed change in accordance with 10CFR50.92 and has determined that this change does not involve a significant hazards consideration in that the change would not:

1. Involve a significant increase in the probability or consequences of an accident previously analyzed.

There are no design basis accidents adversely affected due to this proposed change. The new proposed figure is fully consistent with the analyses previously provided to the NRC Staff supporting the Millstone Unit No. 1 spent fuel pool reracking submitted June 24, 1988 (Reference 1). Criticality in the fuel pool will be precluded as long as enrichment and gadolinium loadings meet the requirements of the proposed figure. Thus, there is no increase in the probability of a criticality event. In addition, since criticality is precluded, consequences are also not adversely affected.

2. Create the possibility of a new or different kind of accident from any previously analyzed.

Since there are no changes in the way the plant is operated, the potential for an unanalyzed accident is not created. No new failure modes are introduced. Bundle and storage rack design is such that there is no chance for a criticality event in the Millstone Unit No. 1 spent fuel pool. This change also ensures that all future bundles meet the criterion that precludes criticality. Thus, there is no increase in the probability of a new or different kind of accident.

3. Involve a significant reduction in a margin of safety.

Since the proposed change does not affect the consequences of any accident previously analyzed, there is no reduction in a margin of safety. The proposed change is fully consistent with the analyses previously provided to the NRC Staff in Reference 1 regarding fuel bundle reactivity. Thus, preventing criticality in the Millstone Unit No. 1 spent fuel pool is maintained with no loss of margin.