

# NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY  
WESTERN MASSACHUSETTS ELECTRIC COMPANY  
HOLYOKE WATER POWER COMPANY  
NORTHEAST UTILITIES SERVICE COMPANY  
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October 31, 1989

Docket Nos. 50-213

50-245

50-336

50-423

A08283

Re: Generic Letter 88-20  
Generic Letter 88-20,  
Supplement 1

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

Gentlemen:

Haddam Neck Plant  
Millstone Nuclear Power Station, Unit Nos. 1, 2, & 3  
Response to Generic Letter 88-20, Supplement 1  
Individual Plant Examinations for Severe Accident Vulnerabilities

## Introduction and Purpose

The purpose of this submittal is to supplement our July 27, 1989 letter<sup>(1)</sup> which Northeast Nuclear Energy Company (NNECO) and Connecticut Yankee Atomic Power Company (CYAPCO) submitted, on behalf of Millstone Unit Nos. 1, 2, and 3 and the Haddam Neck Plant, respectively, in response to Generic Letter (GL) 88-20.<sup>(2)</sup> Our July 27, 1989 letter and this supplement<sup>(3)</sup> constitute the formal sixty-day response to GL 88-20, Supplement 1,<sup>(3)</sup> in accordance with 10CFR50.54(f), noticed in 54FR36402, on September 1, 1989.

- (1) E. J. Mroczka letter to U.S. Nuclear Regulatory Commission, "Haddam Neck Plant, Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3, Response to Generic Letter 88-20, Individual Plant Examinations for Severe Accident," dated July 27, 1989.
- (2) D. M. Crutchfield letter to All Licensees Holding Operating Licenses and Construction Permits for Nuclear Power Reactor Facilities, "Individual Plant Examination for Severe Accident Vulnerabilities-10CFR50.54(f) (Generic Letter No. 88-20)," dated November 23, 1988.
- (3) J. G. Partlow letter to All Licensees Holding Operating Licenses and Construction Permits for Nuclear Power Reactor Facilities, "Initiation of the Individual Plant Examination for Severe Accident Vulnerabilities - 10CFR50.54(f) - Generic Letter No. 88-20, Supplement No. 1," dated August 29, 1989.

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While we believe that our July 27, 1989 submittal was very comprehensive, this supplemental letter provides additional information pertaining to the particular methods and approaches expected to be utilized for the remaining portions of the Individual Plant Examination (IPE) for the four Northeast Utilities (NU) plants. It also provides updated information relative to some of the previously submitted scheduler milestones.

#### Methods and Approaches

The Millstone Unit No. 3 IPE, as stated in our July 27, 1989 submittal, utilizes a full level 3 PRA as the selected analytical technique. The NRC Staff review of the PRA was completed, accepted, and noted in our submittal.

The Millstone Unit No. 1 IPE front end analysis, as stated in our July 27, 1989 submittal, involves a level 1 PRA, including fire and internal flooding analyses. These have been reviewed by NRC Staff, found acceptable, and noted in our July 27, 1989 letter. The back-end analysis, currently in progress, builds on the IDCOR and BWR Owners' Group reference plant, (4) (Peach Bottom) for containment structural analysis. It utilizes NUREG-1150, (4) for timing of key events, evaluating physical phenomena, source term analysis and Containment Event Tree (CET) quantification. Additionally, plant specific thermal-hydraulic analyses using the latest available version of the Modular Accident Analysis Program (MAAP) Code will be used.

The Haddam Neck Plant IPE, as stated in our July 27, 1989 submittal, utilizes a level 1 PRA, including fire and internal flooding analyses for the front-end analytical technique. These previously submitted analyses have been reviewed by NRC Staff and found acceptable. The back-end analysis will build on NUREG-1150 (Surry Plant) for containment analysis, while supplementing the results with plant specific simplified containment structural analysis and detailed MAAP Code analyses.

The Millstone Unit No. 2 level 1 PRA development is currently seventy-five percent complete. When complete, it will include common cause, human reliability, and plant specific failure data. All support system interdependencies will also be modeled. The back-end analysis will be an abbreviated level 2 PRA, utilizing reduced CETs, accounting for phenomenology identified in NUREG-1150, including source term characterization. The timing of key events will be derived utilizing plant specific MAAP Code analysis. Since this effort is scheduled to be performed last, an assessment will be made at the initiation of the work as to which plant analysis will be referenced, if at all.

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(4) U.S. Nuclear Regulatory Commission, NUREG-1150, "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants," dated June 1989.

### Milestones and Schedules

The July 27, 1989 submittal included a comprehensive discussion of the PRA development, reporting, and status of IPE milestone schedules, for all four units, (pages 10 through 12), utilizing almost entirely in-house expertise. As acknowledged acceptable in NUREG-1335 Appendix C, our plans for summary reports will vary as a function of the unit specific PRA development. Since much of our PRA and examination has been accomplished prior to the IPE initiation date, our current plans include numerous references to previously submitted documentation. This is fully consistent with information presented in Appendix C, particularly Section 11.

To reiterate the specific summary report schedules, we expect to submit the Millstone Unit No. 3 report in mid-1990. The Millstone Unit No. 1 report is expected to be submitted in mid to late 1991 time frame. The Haddam Neck Plant report is expected to be submitted during the first half of 1992.

The Millstone Unit No. 2 summary report is currently planned for submittal near the end of 1992 to the early part of 1993, depending on internal PRA developmental resource demands. In the unlikely event that these development demands exceed current expectations, the subsequent summary report submittal could be impacted to the point of slightly exceeding the time requested by GL 88-20.

As mentioned in the July letter, we intend to process any potential modifications resulting from the IPE through our Integrated Safety Assessment Program (ISAP) as described and suggested in GL 88-20 and NUREG-1335, Appendix C. The evaluation of potential modifications in ISAP may occur after the respective IPE summary report is submitted to the Staff. Accordingly, implementation schedules for modifications may not be included in the IPE summary reports, but in subsequent ISAP submittals. As you are aware, in parallel with our in-house PRA development and IPE efforts, we are also expanding our ISAP program beyond Haddam Neck and Millstone Unit No. 1 to include Millstone Unit Nos. 2 and 3. Like IPE, implementation of ISAP at Millstone Unit No. 2 is contingent upon completion of the evaluation tools, most notably the plant-specific PRA.

In keeping with our continuing ISAP evolution, our next developmental goal will involve horizontal, multiple-unit integrated evaluation across all four plants. This concept is also addressed and favorably endorsed in the Integrated Safety Assessment section of NUREG-1335, Appendix C, pages 35 and 36. We view this as an acknowledged opportunity to improve our existing analytical and managerial decision-making capability. The overall ISAP perspective is to optimize resource allocation effectiveness for maximum aggregate safety benefit.

