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Docket No. 50-213

Director of Nuclear Reactor Regulation
Attn: Mr. D. L. Ziemann, Chief
Operating Reactors Branch #2
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Reference: (1) 10CFR50.55a(g)

Gentlemen:

Haddam Neck Plant
Inservice Inspection and Testing Program

Paragraph 5(iii) of Reference (1) requires that licensees notify the NRC if certain Code Requirements are found to be impractical and submit information to support these determinations.

Connecticut Yankee Atomic Power Company (CYAPCO) has determined that reactor coolant pump examinations, and some vessel cladding examinations originally scheduled for the 1980 reactor refueling outage are impractical for reasons outlined below, and, therefore, intends to delay them until the 1981 refueling outage. In addition, we are proposing an alternate examination method for Category B-B welds on the regenerative heat exchanger.

Reactor Coolant Pump (RCP) Examinations

ASME Section XI, Table IWB-2500, examination Categories B-L-1 and B-L-2, requires that one of the four RCP's be disassembled and inspected at or near the end of each inspection interval. Accordingly, these examinations were scheduled for the 1980 refueling period. Westinghouse (W), the pump manufacturer, has only recently presented information to CYAPCO which has resulted in our determination that it would be prudent to delay pump disassembly.

- Pump design did not provide for disassembly of fixed internals, as there were no inservice inspection requirements for any reactor system components until 1970, over two years after the Haddam Neck Plant went into service. These pumps were designed to provide reliable service for the plant lifetime without internal maintenance or inspection.

- The reactor coolant pump casing consists of four Type 316 stainless steel cast rings with minimum thickness of approximately eight inches. Considering the stainless steel Type 316 material characteristics and the water chemistry limitations for the reactor coolant system, the potential for any stress corrosion mechanism is considered to be negligible. Therefore, service induced flaws would most likely be generated from a cyclical loading mechanism such as fatigue; however, the pump bowl geometry as well as the endurance limit of the given material make this, also, a negligible concern.

- Proper planning of pump disassembly requires construction of a mock-up, development of special tools, and detailed planning of every step of the procedure to minimize man-rem exposures. Radiation levels will be very high -- estimated at 60 - 80 rem at the pump impeller prior to decontamination. Even after decontamination total explosures of 400 - 600 man-rem are considered probable.

- Category B-L-1 requires a volumetric examination of the three pump casing pressure-retaining welds. It is extremely doubtful that source radiography would be successful because of the high background radiation, even if the welds can be located accurately from inside the pump. By delaying the inspections, it is highly probable that the portable Linac unit being developed by EPRI will be available for use. It is our judgment that more acceptable radiography would be possible with the Linac.

- There are also risks involved with the mechanics of disassembly. CYAPCO has no spare parts for fixed internals and W has very few in stock. If a part is damaged during disassembly or reassembly, a replacement may not be available.

- Complete disassembly of an in-service RCP of the Haddam Neck Plant's design has never been accomplished anywhere in the industry. W informed CYAPCO that removal of the casing adapter, will be difficult if there has been any significant amount of warpage, and reassembly will be even more difficult, if not impossible.

- After disassembly, the interior surfaces of the pump casing must be cleaned by hydrolaser or an equivalent method, as there is most probably an oxide buildup which will mask the location of the seam welds. CYAPCO is unsure how effective this will be. High radiation levels will require that a television camera be used to locate the welds and position the source tube for radiography. If the casing radiation levels cannot be reduced to lower than 700 mrem/hour, source radiography will not be effective.

As an alternate to the B-L-1 and B-L-2 examinations for the 1980 refueling, CYAPCO intends to visually inspect the pump casing in accordance with IWA-5000 and IWB-5000 during the performance of the system hydrostatic pressure test.

It is, therefore, our position that the B-L-1 and B-L-2 reactor coolant pump examinations, originally scheduled for this year, will be deferred until the 1981 reactor refueling outage to allow CYAPCO to procure the necessary tools and equipment required for a meaningful inspection.

Interior Clad Surfaces of the Steam Generators and Pressurizer

Examination Category B-I-2, ASME Section XI, Summer, 1975 Addendum, requires that clad patches in the four Steam Generator primary waterboxes and pressurizer be visually inspected at or near the end of each inspection interval. In that CYAPCO intends to open only two of the Steam Generators for tubing eddy current examinations, it is intended to defer the inspections on the pressurizer and the two Steam Generators not scheduled for ECT to the 1981 reactor refueling outage.

Experience at the Haddam Neck Plant has shown these areas to be free of problems. The primary waterboxes of all four Steam Generators were entered in the 1979 reactor refueling outage, but a formal inspection of cladding was not made. The pressurizer cladding was inspected during the 1973 refueling but CYAPCO does not have a valid inspection report for this examination. In that there are no plans to enter this component during the forthcoming shutdown, and the manway is seal welded, it is our intention to eliminate the radiation exposure associated (estimated at 2 - 5 man-rem) and delay the examinations until 1981.

Pressure-Retaining Welds in the Regenerative Heat Exchanger

Examination Category B-B requires that for non-exempt Class 1 vessels, at least 10% of the length of each longitudinal weld and 5% of the length of each circumferential weld be examined volumetrically each interval. The regenerative heat exchanger is a three-pass vessel, having a total of six head-to-shell welds and six shell-to-tubesheet welds. In view of the high radiation levels (up to 10 rem/hour) associated with this vessel, it is proposed that examinations be revised to require that 100% of the total of one head-to-shell weld and 100% of one shell-to-tubesheet weld be inspected during each 40-month period rather than a much smaller percentage of each of twelve welds, each interval. This revised extent of examination would enable CYAPCO to reduce personnel radiation exposure while inspecting many more inches of weld than required by Code. The requirements of IWB-2430 concerning additional examinations would be adhered to if indications are revealed which exceed the allowable standards.

In that the Haddam Neck Plant is scheduled to commence the 1980 refueling on May 3, 1980, it is requested that your Staff review this position expeditiously.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

W. G. Counsil
Vice President