

CONGRESSIONAL BRIEFING FOR MARBLE HILL NUCLEAR GENERATING STATION

FEBRUARY 25, 1982

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PLANT NAME: Marble Hill Nuclear Generating Station, Units 1 and 2
LOCATION: Jefferson County, Indiana, 11 miles north of Madison, Indiana
LICENSEE: Public Service Company of Indiana
TYPE REACTOR: Two 1130 megawatt (electrical) Westinghouse Pressurized Water Reactors. Replicates the Byron Station
ARCHITECT-ENGINEER: Sargent Lundy
CONSTRUCTOR: Public Service Company of Indiana
CONSTRUCTION STARTED: August 24, 1977 (LWA)
April 4, 1978 (CP)
PROJECTED FUEL LOADING DATES: Unit 1, June, 1986 (31 percent completed);
Unit 2, June, 1987 (15 percent completed);
Overall Construction (25 percent completed)

BACKGROUND

NRC inspections of concrete work underway in April and May, 1979, identified deficiencies in the control of quality during concrete placement at Marble Hill. In a meeting with Region III on May 15, Public Service of Indiana (PSI) agreed to upgrade its quality assurance program for the concrete work and to determine through testing if previously poured concrete was adequate.

In June a former site employee alleged that surface defects in the concrete had been improperly patched, and in July the National Board of Boiler and Pressure Vessel Inspectors identified code-compliance problems with piping installation.

Concrete work was halted June 26 at the request of Region III; then briefly resumed in July before all safety-related construction work was halted August 7, 1979, by PSI after NRC inspectors determined there was significant questions concerning PSI's quality assurance program and its construction management.

These findings were based on NRC inspections of concrete placement, repairs and testing procedures, on the confirmation of allegations by construction workers at the site, and on the finding of the National Board of Boiler and Pressure Vessel Inspectors.

A confirmation order was issued by the NRC staff on August 15, 1979.

A full time NRC Resident Inspector was assigned to Marble Hill on December 3, 1979.

After numerous meetings with the NRC, PSI submitted on February 28, 1980, its formal reply to the order, detailing its effort to upgrade and implement its revised QA program.

One month later, on March 25, 1980, a public meeting on the proposed corrective action was held by the NRC before some 500 local residents in Madison, Indiana.

To assure that PSI's corrective actions were properly and effectively implemented, the Commission approved a five-step plan for gradual rescission of the order. The five stages would be subject to intensive reviews by NRC inspectors with an NRC "hold point" at each stage before the next could be undertaken. Additionally, there were intermediate "hold points" within each stage.

The plan covered: (1) Revised Quality Assurance Program; (2) Receipt Inspections; (3) Material Verification Program; (4) Construction Verification Program; (5) Resumption of Construction.

One major concern of the NRC's was the apparent low number of qualified QA and management personnel at the site. This concern was addressed by the licensee with an accelerated hiring and training program and a shifting of personnel to the plant site. Currently the entire Nuclear Division is at the site.

Two independent outside consultants were also retained by the NRC to provide an independent analysis of the concrete work, which had been requested by Save-the-Valley a Madison, Indiana, public interest group. A third engineer, representing Save-the-Valley accompanied the NRC consultants during their review at the Site.

After PSI restructured its QA and Construction Management Programs, it was permitted on July 7, 1980, to resume receipt inspections of materials at the construction site, and later contractors were also permitted to undertake receipt inspections.

On December 5, 1980, the NRC permitted limited electrical work and pipe installation to resume by Cherne Contracting Co., the piping contractor, and Commonwealth-Lord, the electrical contractor. Then on March 27, 1981, PSI was authorized to resume all remaining safety-related work, including concrete placement. Unrestricted authority to continue the work would not be granted until the utility successfully demonstrated that its quality assurance and construction management programs were implemented properly.

The additional work authorization included concrete repair and placement, structural steel installation and protective coatings. In addition to new concrete work,

PSI contractors began removing and replacing all patches previously made to repair surface defects in the concrete, about 6,400. As of February 13, 1982, the patching program is about 82 percent completed.

An NRC review of tests and examinations concluded that the existing in-place concrete work was structurally sound. This determination was based, among other things, on tests performed by PSI contractors and observed by NRC personnel.

The NRC's independent consultants also concluded that the quality of the concrete at Marble Hill was acceptable.

RECENT STATISTICAL ISSUE

The commissioners recently declined, on January 6, 1982, to review Director Stello's March 27, 1981, order allowing resumption of safety-related concrete work at Marble Hill. The request had been made through a 2.206 petition from Save-the-Valley, which claimed that the statistical methodology used to test in-place concrete was faulty. The NRC had approved a four-stage sequential testing pla

to determine the adequacy of in-place concrete at Marble Hill. The concrete had to meet the NRC's 95/95 criteria; that is, the NRC had to have 95 percent assurance that no more than 5 percent of the concrete was possibly defective.

Save-the-Valley claimed the sequential plan, if carried through, would provide only a 90/95 assurance factor. The plan: If one defect was found in the first 59 areas tested, then the test would be expanded to 93 areas. If another defect was found, the test would be expanded to 124 areas, and finally to 153 areas if a third defect was found.

L. D. Y. Ong, of NRC's Office of Policy Evaluation agreed with Save-the-Valley stating that the sequential plan would indeed only provide a 90/95 factor.

However, it was pointed out that the whole argument was moot since no defects were found in the first 59 areas tested. As a result, there was no need to go any further. Zero defects in the 59 areas equaled 95/95, and thus met NRC requirements.

MARBLE HILL TODAY

In an October 26, 1981, inspection report on Marble Hill, Region III Inspectors stated in item 12, "Summary Findings of This Special Inspection,": "It is Region III's conclusion that PSI has adequately implemented its commitments made in response to the August 15, 1979, "Order Confirming Suspension of Construction" and the related conventions and agreements in accordance with the NRC's document entitled "Graduated Recission of Order dated August 15, 1979".

On February 12, 1982, following a site visit by NRC management, the "Confirming Order" was lifted, thus enabling construction to continue with no restrictions.

CHRONOLOGY OF EVENTS

1979

- APRIL/MAY - NRC IDENTIFIED QUALITY PROBLEMS
DURING CONCRETE PLACEMENTS
- JUNE - FORMER SITE EMPLOYEE MADE
ALLEGATION CONCERNING CONCRETE
- JUNE 26 - CONCRETE WORK HALTED BY NRC,
LATER RESUMED
- AUGUST 7 - PSI STOPS ALL SAFETY-RELATED WORK
- AUGUST 15 - NRC ISSUES "CONFIRMATORY ORDER"
- DECEMBER 3 - NRC ASSIGNS FULL-TIME RESIDENT INSPECTOR

1980

JANUARY 7	-	ASME ISSUED PSI AN INTERIM LETTER
FEBRUARY 28	-	PSI RESPONDS TO THE NRC ORDER
MARCH 25	-	PUBLIC MEETING
MAY 15	-	NRC ISSUED "GRADUATED RECISSION OF ORDER"
JULY 7	-	PSI AUTHORIZED TO PERFORM RECEIPT INSPECTION
NOVEMBER 12	-	ASME SURVEY OF PSI, POSITIVE RESULTS
NOVEMBER 13	-	TWO MAJOR CONTRACTORS AUTHORIZED TO PERFORM RECEIPT INSPECTION
DECEMBER 5	-	MECHANICAL AND ELECTRICAL WORK AUTHORIZED

1981

JANUARY 13

PSI RECEIVES "N" CERTIFICATE FROM ASME

MARCH 27

NRC AUTHORIZED CIVIL ACTIVITIES AND
OTHER SAFETY-RELATED WORK

JUNE 25

INDEPENDENT CONCRETE CONSULTANTS
REPORT "IN-PLACE CONCRETE WAS ADEQUATE;
MEETS DESIGN INTENT."

OCTOBER 26

NRC STATUS OF OVERALL PROJECT
EFFECTIVENESS - ADEQUATE

1982

JANUARY 6

COMMISSIONER'S DECLINED TO REVIEW
DIRECTOR STELLO'S DECISION OF MARCH 27,
1981

FEBURARY 12

CONFIRMING ORDER LIFTED