

U. S. NUCLEAR REGULATORY COMMISSION
REGION III

Report Nos. 50-315/90008(DRP); 50-316/90008(DRP)

Docket Nos. 50-315; 50-316

License Nos. DPR-58; DPR-74

Licensee: American Electric Power Service Corporation
Indiana Michigan Power Company
1 Riverside Plaza
Columbus, OH 43216

Facility Name: Donald C. Cook Nuclear Power Plant, Units 1 and 2

Meeting At: Region III Office, Glen Ellyn, Illinois

Type of Meeting: Enforcement Conference

Inspectors: B. L. Jorgensen
D. G. Passehl

Approved By: *P. H. Burgess*
B. L. Burgess, Chief
Projects Section 2A

3/9/90.
Date

Meeting Summary

Meeting on February 27, 1990 (Report Nos. 50-315/90008(DRP); 50-316/90008(DRP))
Areas Inspected: Apparent violation of Technical Specifications requiring Main Steam Stop Valves (MSSVs) to be OPERABLE, by being capable of full valve closure within 5 seconds, for plant operation in MODEs 1, 2, and 3. MSSV maintenance and testing practices, root cause assessment of valve performance problems, and the safety significance of specific examples of degraded MSSV performance were also discussed.

Findings: One violation (Main Steam Stop Valve operability requirements not met - Level IV) was identified, as were specific concerns in the areas of misapplication of Section XI valve test criteria and ineffective root cause evaluation of MSSV performance problems.

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DETAILS

1. Persons Contacted

a. American Electric Power Service Corporation (AEPSC)

M. P. Alexich, Vice President, Nuclear Operations
S. J. Brewer, Manager, Nuclear Safety and Licensing
R. G. Vasey, Engineer, Nuclear Safety and Licensing
C. D. Olson, Principal Engineer, Technical Assessment Section
S. P. Hodge, Group Manager, Mechanical Systems
D. F. Powell, Assistant Section Manager - Piping, HVAC and
Fire Protection

b. D. C. Cook Plant

A. A. Blind, Plant Manager
J. A. Rutkowski, Assistant Plant Manager, Technical Support
J. B. Droste, Superintendent, Technical Engineering
P. F. Carteaux, Superintendent, Safety and Assessment

c. Nuclear Regulatory Commission (NRC)

A. B. Davis, Regional Administrator, Region III
C. J. Paperiello, Deputy Regional Administrator
W. L. Forney, Deputy Director, Division of Reactor Projects
H. J. Miller, Director, Division of Reactor Safety
W. L. Axelson, Chief, Projects Branch 2
J. G. Gitter, Licensing Project Manager, NRR
J. A. Grobe, Director of Enforcement
B. L. Jorgensen, Senior Resident Inspector

2. Enforcement conference

An Enforcement Conference, attended as indicated in Paragraph 1 above, was held in the NRC Region III Office on February 27, 1990. Pertinent details of events precipitating the conference, including violations have been previously documented in Inspection Report 50-315/90005(DRP) 50-316/90005(DRP). The issues involved performance problems of the D. C. Cook Main Steam Stop Valves (MSSVs).

The purposes of the Enforcement Conference were: (1) to review the occurrence of slow stroke times of all four Unit 2 Main Steam Stop Valves (MSSVs) in January, 1990; (2) to discuss the broad concerns associated with this event; (3) to discuss the specific circumstances and associated potential violations; and (4) to obtain additional information on licensee assessment of the events' cause, safety significance, and corrective actions.

The NRC representatives identified the broad concerns relating to this event in the areas of evaluation and response for surveillance failures, apparently untimely maintenance on MSSV dump valves, and overall MSSV

reliability. The chronology of events leading up to the January, 1990 discovery of degraded conditions in all four Unit 2 MSSVs was briefly summarized, and potential violations were noted.

The licensee representatives described technical details for the D. C. Cook MSSV system as background information, then summarized review of the historical test data on the valves. The conclusions from this review were that reliability and performance of the MSSVs had been satisfactory; that significant failures (not meeting Technical Specification stroke times) had been infrequent, amounting to four failures in about 240 tests; and that evaluation of test results and other valve performance indicators had not been neglected.

The methods and bases for MSSV and MSSV dump valve maintenance - past and present - were described by licensee representatives, as were the methods and bases for MSSV testing - past and present. Information was presented to argue that the cause and effect relationship between dump valve leakage and degraded MSSV stroke performance, which became evident by the January 1990 event, was not readily evident before that event.

The safety significance of MSSV stroke times in excess of the 5-second limit of Technical Specifications was discussed. The licensee has previously submitted an analysis to the NRC demonstrating that stroke times up to at least 8 seconds are acceptable from a safety perspective. This submittal was in the form of a Technical Specification amendment request.

A general discussion of plant operating philosophy, and a presentation on the decision making process used at the plant as the events of January 8-11, 1990 unfolded. Following this discussion the Enforcement Conference concluded.

3. Conclusion

The licensee's methods for testing Main Steam Stop Valves in both units permitted an immediate retest of a valve which performed unsatisfactorily. By the nature of the problems experienced with the valves over the years, involving gradual accumulation of condensate in the valve operating piston (which retards the stroke), an immediate retest was not a valid way to demonstrate the valve problem had been corrected.

When Unit 2 valve 2-MRV-210 was timed in 5.5 seconds on June 11, 1989, an immediate retest was performed and served as the basis for considering the valve OPERABLE thereafter. When retested on January 8, 1990, valve 2-MRV-210 required 5.9 seconds to stroke. Subsequent investigations showed the root cause of the January 1990 problem to be condensate accumulation which had also caused the June 1989 problem. Thus, from June 1989 till January 1990 valve 2-MRV-210 was not capable of closing within 5 seconds and was therefore not OPERABLE. Technical Specification 3.7.1.5 requires all four MSSVs to be OPERABLE in MODEs 1, 2 and 3. The licensee routinely operated in MODEs 1, 2 and 3 during the time when 2-MRV-210 was inoperable, which is considered a violation of the referenced Technical Specification (Violation 316/90008-01).

Because the application of ASME Code Section XI retest practices appeared inappropriate for the steam-operated MSSVs, and because the licensee's root cause investigation for the June, 1989 problems appeared ineffective, the licensee is being requested to specifically address both these concerns in his response for this violation.