July 23, 1984

Docket No. 50-298

LICENSEE: Nebraska Public Power District

FACILITY: Cooper Nuclear Station

SUBJECT: SUMMARY OF MEETING WITH NEBRASKA PUBLIC POWER DISTRICT (NPPD) CONCERNING RECIRCULATION PIPE REPLACEMENT AT COOPER NUCLEAR STATION (CNS)

On July 12, 1984, the NRC staff met with representatives of NPPD, licensee for Cooper Nuclear Station, and an NPPD consultant in Bethesda, Maryland. The list of attendees is provided in Enclosure 1.

The purpose of the meeting held at the request of the licensee, was to discuss the status of the forthcoming pipe replacement program at CNS. NPPD will replace portions of the recirculation system and other reactor coolant system pressure boundary piping with pipe material less susceptible to intergranular stress corrosion cracking. NPPD will be doing the pipe replacement in accordance with the provisions of 10 CFR Part 50.59 and therefore, the NPPD presentation was made solely as a status update for NRC staff information.

In summary, NPPD will replace certain portions of the recirculation, core spray, reactor water cleanup and residual heat removal piping with piping fabricated of type 316 nuclear grade stainless steel. The need for pipe replacement was indicated by observations of weld cracking during the inspection performed during the last CNS refueling outage. The pipe replacement will be performed during the next refueling outage scheduled to occur from mid-September 1984 to May 1985. The design and materials for the new piping were discussed by a representative of CYGNA, the NPPD design contractor for the pipe replacement. The outline of that part of the presentation is provided in Enclosure 2. The procedure for pipe removal and replacement and the ALARA program for the construction activities were discussed by NPPD personnel. The ALARA program report is scheduled to be submitted to the NRC staff in early August 1984. The total exposure expected to be incurred as a result of the pipe replacement is currently estimated to be 1416 man-rem. The NRC attendees at the meeting provided suggestions to NPPD relative to sources of information available to the licensee from other ongoing or completed pipe replacement programs at other plants.

Original signed by/

Ernest D. Sylvester, Project Manager
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Division of Licensing

Enclosures and cc: See next page

Enclosures:
As stated

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ENCLOSURE 1

LIST OF ATTENDEES

JULY 12, 1984 MEETING - BETHESDA, MARYLAND

COOPER NUCLEAR STATION PIPE REPLACEMENT

Nebraska Public Power District

L. P. Kohles
R. E. Wilbur
J. D. Weaver
G. A. Trevors
J. V. Sayer

CYGNA

A. Cimento

Nuclear Regulatory Commission

W. R. Bennett
I. Barnes
D. DuBois
R. A. Hermann
F. C. Skopec
W. J. Collins
W. S. Hazelton
Y-L Li
M. Fairtile
E. D. Sylester

COOPER NUCLEAR STATION
PIPING REPLACEMENT PROGRAM

DESIGN AND MATERIALS

1) APPLICABLE CODES AND CRITERIA

2) CONFIGURATION MODIFICATIONS

3) IN-SERVICE INSPECTION

4) MATERIAL PROCUREMENT

5) PIPE RUPTURE RESTRAINTS

6) THIRD PARTY REVIEW

COOPER NUCLEAR STATION

PIPING REPLACEMENT PROGRAM

APPLICABLE CODES AND CRITERIA

1) ORIGINAL

ANSI B31.1
AISC

2) CURRENT DESIGN CRITERIA

ASME CODES, SECTION III, 1983 EDITION

- NB 3600 - PIPING
- NB 3200 - SAFE ENDS
- NF - NEW SUPPORTS

LOADING CONDITIONS

- PRESSURE
- TEMPERATURE
- SERVICE LEVELS A THROUGH D
- TEST CONDITIONS

3) SUPPLEMENTAL REQUIREMENTS

RPV NOZZLE LOADS
RRP NOZZLE LOADS
VALVES
- END LOADS
- ACCELERATION

DRYWELL PENETRATIONS
WELDED ATTACHMENTS

4) 10CFR50.59 ANALYSIS

COOPER NUCLEAR STATION

PIPING REPLACEMENT PROGRAM

CONFIGURATION MODIFICATIONS

1) SNUBBER REDUCTION

- SNUBBERS REMOVED FROM RECIRCULATION AND CORE SPRAY PIPING
- IMPROVED MAINTAINABILITY
- APPROPRIATE MARGINS
- LOGICAL TIME TO COMPLETE

2) WELD REDUCTION

- 50% REDUCTION IN CIRCUMFERENTIAL WELDS
- REDUCED FIELD WELDS
- SEAMLESS PIPING
- ALL IMPROVE RELIABILITY OF SYSTEMS

COOPER NUCLEAR STATION

PIPING REPLACEMENT PROGRAM

IN-SERVICE INSPECTION

1) IMPROVE DESIGN FEATURES
   - WELD ACCESSIBILITY
   - WELD JOINTS DESIGNED TO MINIMIZE REFLECTIONS
   - ALLOW USE OF SEMI OR FULLY AUTOMATED ISI

2) DOCUMENTATION OF PRESERVICE INSPECTION
   - ASME CODE 1980 EDITION (WINTER '81 ADDENDA), SECTION XI
   - IEB 83-02 QUALIFICATION

3) VERIFICATION OF WELDING TECHNIQUES
   - WELD CROWN FINISH
   - WELDING PROCEDURES

COOPER NUCLEAR STATION

PIPING REPLACEMENT PROGRAM

MATERIAL PROCUREMENT

1) PROCESS CONSIDERATIONS
   - CAPABILITIES
     - SEAMLESS
     - BENDS
   - CHEMISTRY

2) MATERIAL SELECTION
   - 316 NG STAINLESS STEEL
   - SUPPLEMENTAL CHEMISTRY REQUIREMENTS

3) QA PROGRAM
   - SPECIFICATIONS
   - VENDOR INSPECTIONS
   - RECEIPT

COOPER NUCLEAR STATION

PIPING REPLACEMENT PROGRAM

PIPE RUPTURE RESTRAINTS

1) RESTRAINTS RE-INSTALLED

2) MINOR DEVIATIONS
   - DUE TO SUPPORT RELOCATIONS

3) NO SIGNIFICANT INCREASE IN RESTRAINT LOADS

4) ORIGINAL ANALYSES CONTAIN TRADITIONAL CONSERVATISMS

5) LEAK BEFORE BREAK EVALUATION

COOPER NUCLEAR STATION

PIPING REPLACEMENT PROGRAM

THIRD PARTY REVIEW

1) REVERIFICATION OF DESIGN REQUIREMENTS
   - IGSCC OBJECTIVES
   - COOPER USAR
   - ASME CODE
   - DESIGN SPECIFICATIONS

2) SYSTEMS REVIEWED
   - RECIRCULATION LINE, RISERS, SUPPORTS, SAFE-ENDS
   - CORE SPRAY PIPING AND SAFE-ENDS
   - RECIRCULATION PUMP SUSPENSION SYSTEM
   - PIPE RUPTURE RESTRAINTS

3) ANALYSIS METHODS REVIEW
   - PIPING
   - SUPPORTS
   - SAFE-ENDS

4) REVIEW VERIFIES DESIGN AND ANALYSIS