UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SUPPLEMENTAL SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CONFORMANCE TO REGULATORY GUIDE 1.97

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

On July 19, 1988, the staff forwarded to the licensee its Supplemental Safety Evaluation (SSE) on the review of Palisades Plant's conformance to Regulatory Guide (R.G.) 1.97, Revision 3. The staff found the licensee's design for post-accident monitoring instrumentation acceptable with the exception of the instrumentation for monitoring safety injection tank (SIT) level and pressure.

The licensee, in letters dated April 30, 1992, and September 17, 1993, documented additional deviations from the guidance in R.G. 1.97 that had not previously been identified. Included in these letters were the subjects of isolation of R.G. 1.97 instrumentation and the SIT level and pressure instrumentation. These subjects have been reviewed separately and are not included in this SSE. Resolution of the remaining deviations is discussed below.

2.0 EVALUATION

The staff reviewed the licensee's April 30, 1992, and September 17, 1993, submittals which identified deviations and exceptions for the instrumentation that monitors (1) residual heat removal (RHR) heat exchanger outlet temperature, (2) plant vent stack flow rate, (3) radiation release from steam generator (SG) safety/relief or atmospheric dump valves, and (4) containment isolation valve position. The licensee also identified deviations on the subject of unique identification. These issues are discussed below.

2.1 RHR Heat Exchanger Outlet Temperature

R.G. 1.97 recommends Category 2 instrumentation to monitor RHR heat exchanger outlet temperature. The licensee's present RHR heat exchanger outlet temperature resistance temperature detector (RTD) is not environmentally qualified and the licensee has committed to replace it with an environmentally qualified RTD. Therefore, the licensee's commitment is acceptable.

2.2 Plant Vent Stack Flow Rate

R.G. 1.97 recommends Category 2 instrumentation to monitor plant vent stack flow rate. The licensee's present plant vent stack flow rate transmitter is not environmentally qualified and the licensee has committed to replace it with an environmentally qualified transmitter. Therefore, the licensee's commitment is acceptable.

2.3 Radiation Release from SG Safety/Relief or Atmospheric Dump Valves

R.G. 1.97 recommends Category 2 instrumentation to monitor radiation release from SG safety/relief or atmospheric dump valves. The licensee's present instrumentation is not environmentally qualified. The licensee stated that these radiation monitors do not need to be environmentally qualified because an SG tube rupture event would not result in a harsh environment in the area containing the radiation monitors. The function of the main steam line radiation monitors is to calculate the potential offsite dose which could occur following a release through the SG safety/relief or atmospheric dump valves. An alternate method of performing this calculation is provided by the backup high range effluent monitors located on the auxiliary building roof. Therefore, the use of the existing radiation monitors in conjunction with the backup high range effluent monitors is acceptable.

2.4 Containment Isolation Valve Position

R.G. 1.97 recommends Category 1 instrumentation to monitor containment isolation valve position. The licensee has identified nine sets of redundant pneumatically operated valves that have position indication circuit cabling sharing a common raceway that do not meet the Category 1 redundancy criteria. These valves are not operated post-accident and fail closed on the loss of either electric power or air pressure. A lack of position indication would not result in misleading the operator and by placing the valve handswitch in the closed position the operator would assure that power is removed from the solenoid operator thus closing the valve. Therefore, this deviation is acceptable.

2.5 Type A, B, and C Instrument Designation

R.G. 1.97 recommends that Type A, B, and C instruments designated as Category 1 and 2 be specifically labeled with a common designator on the control panels so that the operator can easily discern that they are intended for use under accident conditions.

The licensee stated that they have a method for labeling R.G. 1.97 control room instrumentation. This method consists of placing equipment identifiers on the control panels near environmentally qualified equipment as well as Category 1 and 2, Type A, B, and C, R.G. 1.97 instruments.

R.G. 1.97 recommends labeling of a minimum set of instrumentation to be monitored during a post-accident situation. This labeling would not restrict the operator to only using those instruments that are labeled with the R.G. 1.97 identifiers. The operator may supplement this instrumentation with other non-R.G. 1.97 instrumentation. The licensee's existing instrumentation labeling scheme, along with assurance that operators are aware that

environmentally qualified instrumentation (either designated or not as R.G. 1.97) would be operational post-accident, meet the intent of R.G. 1.97. Therefore, because the licensee's operator training provides the necessary information on instrument reliance following an accident, the control room labeling scheme is acceptable.

3.0 CONCLUSION

Based on our review of the licensee's submittals, the staff concludes that the Palisades Plant instrumentation that monitors (1) RHR heat exchanger outlet temperature, (2) plant vent stack flow rate, (3) radiation release from SG safety/relief or atmospheric dump valves, and (4) containment isolation valve position is acceptable. In addition, the staff concludes that the licensee's program on identification of R.G. 1.97 instrumentation is also acceptable.

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