

Public Service
Electric and Gas
Company

Corbin A. McNeill, Jr.
Senior Vice President -
Nuclear

Public Service Electric and Gas Company P.O. Box 236, Hancocks Bridge, NJ 08038 609 339-4800

MAY 05 1987
NLR-N87078
LCR 87-05

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

REQUEST FOR AMENDMENT
SALEM GENERATING STATION
UNIT NO. 1 AND 2
DOCKET NOS. 50-272/50-311

In accordance with the Atomic Energy Act of 1954, as amended and the regulations thereunder, we hereby transmit copies of our request for amendment Facility Operating License DPR-70 and DPR-75 for Salem Generating Station Unit Nos. 1 and 2.

The proposed amendment requests modification of Reactor Trip System and Emergency Safety Features response times to accommodate removal of RTD bypass piping.

In accordance with the provisions of 10 CFR 2.790 the Licensee requests withholding portions of this document from disclosure to the public. Portions of this document contain information which is considered to be withholdable under 10 CFR 2.790(2)(4). Justification is provided in the enclosed Combustion Engineering affidavit. For your convenience, a proprietary and non-proprietary version of this submittal are being provided.

Enclosed is a check in the amount of \$150.00 as required by 10 CFR 170.21.

Pursuant to the requirements of 10 CFR 50.91, a copy of this request for amendment has been sent to the State of New Jersey as indicated below.

This submittal includes one (1) signed original and thirty-seven (37) copies (5 proprietary, 32 non-proprietary).

8705110280 870505
PDR ADDCK 05000272
P PDR

*Rec'd w/ check
\$150.00*

*N-PROP - NRC-PDR
LPDR
NSIC*

*PA01
1/5*

Should there be any questions regarding this matter, please feel free to contact us.

Sincerely,

Alan E. Muttarby
for C. A. McNeill, Jr.

Attachment

C Mr. D. C. Fischer
Licensing Project Manager

Mr. T. J. Kenny
Senior Resident Inspector

Mr. W. T. Russell, Administrator
Region I

Director, Bureau of Radiation Protection
Department of Environmental Protection
380 Scotch Road
Trenton, NJ 08628

Ref: LCR 87-05

STATE OF NEW JERSEY)
) SS.
COUNTY OF SALEM)

Steven E. Miltenberger, being duly sworn according to law deposes and says:

I am Vice President of Public Service Electric and Gas Company, and as such, I find the matters set forth in our letter dated May 5, 1987, concerning Facility Operating License DPR-70 and DPR-75 for Salem Generating Station, is true to the best of my knowledge, information and belief.

Steven E. Miltenberger

Subscribed and Sworn to before me
this 5th day of May, 1987

Laraine Y. Beard

Notary Public of New Jersey

LARAIN Y. BEARD
Notary Public of New Jersey
My Commission Expires May 1, 1991

My Commission expires on _____

AFFIDAVIT PURSUANT

TO 10 CFR 2.790

Combustion Engineering, Inc.)
State of Connecticut)
County of Hartford) SS.:

I, A.E. Scherer, depose and say that I am the Director, Nuclear Licensing, of Combustion Engineering, Inc., duly authorized to make this affidavit, and have reviewed or caused to have reviewed the information which is identified as proprietary and referenced in the paragraph immediately below. I am submitting this affidavit in conformance with the provisions of 10 CFR 2.790 of the Commission's regulations and in conjunction with Public Service Electric and Gas Company for withholding this information.

The information for which proprietary treatment is sought is contained in the following document:

Licensing Report S-87-05, Licensing Report for New Narrow Range Temperature Measurement System (RTD Bypass Elimination) Public Service Electric & Gas Salem 1&2, April 1987

This document has been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Combustion Engineering in designating information as a trade secret, privileged or as confidential commercial or financial information.

Pursuant to the provisions of paragraph (b) (4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

1. The information sought to be withheld from public disclosure are descriptions of the design, configuration, and performance for a new narrow range temperature measurement system, which is owned and has been held in confidence by Combustion Engineering.
2. The information consists of test data or other similar data concerning a process, method or component, the application of which results in substantial competitive advantage to Combustion Engineering.
3. The information is of a type customarily held in confidence by Combustion Engineering and not customarily disclosed to the public. Combustion Engineering has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The details of the aforementioned system were provided to the Nuclear Regulatory Commission via letter DP-537 from F. M. Stern to Frank Schroeder dated December 2, 1974. This system was applied in determining that the subject document herein are proprietary.
4. The information is being transmitted to the Commission in confidence under the provisions of 10 CFR 2.790 with the understanding that it is to be received in confidence by the Commission.
5. The information, to the best of my knowledge and belief, is not available in public sources, and any disclosure to third parties has been made pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.
6. Public disclosure of the information is likely to cause substantial harm to the competitive position of Combustion Engineering because:

a. A similar product is manufactured and sold by major pressurized water reactor competitors of Combustion Engineering.

b. Development of this information by C-E required hundreds of manhours and tens of thousands of dollars. To the best of my knowledge and belief a competitor would have to undergo similar expense in generating equivalent information.

c. In order to acquire such information, a competitor would also require considerable time and inconvenience related to the development of a design and performance evaluation for a new narrow range temperature measurement system.

d. The information required significant effort and expense to obtain the licensing approvals necessary for application of the information. Avoidance of this expense would decrease a competitor's cost in applying the information and marketing the product to which the information is applicable.

e. The information consists of a description of the design, configuration, and performance for a new narrow range temperature measurement system, the application of which provides a competitive economic advantage. The availability of such information to competitors would enable them to modify their product to better compete with Combustion Engineering, take marketing or other actions to improve their product's position or impair the position of Combustion Engineering's product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.

f. In pricing Combustion Engineering's products and services, significant research, development, engineering, analytical, manufacturing, licensing, quality assurance and other costs and expenses must be included. The ability of Combustion Engineering's competitors to utilize such

information without similar expenditure of resources may enable them to sell at prices reflecting significantly lower costs.

g. Use of the information by competitors in the international marketplace would increase their ability to market nuclear steam supply systems by reducing the costs associated with their technology development. In addition, disclosure would have an adverse economic impact on Combustion Engineering's potential for obtaining or maintaining foreign licensees.

Further the deponent sayeth not.



A.E. Scherer
Director
Nuclear Licensing

Sworn to before me
this 22nd day of April, 1987.


Susanne Smith
Notary Public

SUSANNE SMITH, NOTARY PUBLIC
State of Connecticut No. 74148
Commission Expires March 31, 1990

DESCRIPTION OF AMENDMENT REQUEST

The proposed amendment would modify Technical Specifications 3.3.1, "Reactor Trip System Instrumentation", and 3.3.2, "Engineered Safety Features (ESF) Instrumentation." The proposed request for amendment is made to support the removal and replacement of the existing Reactor Coolant System narrow range Resistance Temperature Detectors (RTDs). The existing technical specifications pages for Units 1 and 2 are provided in Attachments A and B, respectively. Table 3.3.2, "Reactor Trip System Response Times" would be modified to increase the measured response time for the Overtemperature Delta-T (OTΔT) trip from 4.0 seconds to 5.75 seconds. Table 3.3.5, "Engineered Safety Features Response Times", will be modified. All of the response times listed under Initiating Signal Number(5), "Steam Flow in Two Steam Lines - High Coincident with T_{avg} - Low-Low" will be increased 1.75 seconds. The proposed Technical Specification sections 3.3.1 and 3.3.2 for Units 1 and 2 are provided as Attachments C and D, respectively.

As described in the Updated Final Safety Analysis Report (UFSAR) Section 5.6.1, Reactor Coolant System (RCS) hot and cold leg temperatures are measured by narrow range direct immersion RTDs located in bypass manifolds. Through the use of a bypass manifold around each steam generator, hot leg temperatures are obtained by mixing the flow from three scoop connections which extend into the flow stream at locations 120° apart circumferentially. Flow for the cold leg manifold is obtained downstream of the pump. Both hot leg and cold leg bypass flows enter a common return line to the cross over leg. Figure 5.1-6A and B of the UFSAR illustrates the existing configuration.

As discussed in UFSAR Section 7.2.3.2, the existing RTD temperature outputs are used for a number of purposes. They are used by the Reactor Protective System for the Overtemperature Delta-T (OTΔT) and Overpower Delta-T (OPΔT) trip functions. Reactor control is based upon T_{avg} signals derived from protective system channels. An engineered safety feature (ESF) actuation and steam line isolation is actuated on steam flow in two steam lines - high coincident with T_{avg} -low-low. The output from the narrow range RTDs are used to calculate the T_{avg} input to this ESF actuation. The T_{avg} signals are provided to the pressurizer level control system, the steam dump control system, the reactivity computer, and certain interlocks.

The functions that utilize temperature input from the existing narrow range RTDs will not be affected by their proposed removal and replacement because the signals derived from the proposed replacements will be equivalent to those provided by the existing RTDs. Only one of the functions which use signals from the existing RTDs, the OTΔT, is a primary trip in the accident analysis (UFSAR Chapter 15). The steam flow in two steam lines - high coincident with T_{avg} -low-low ESF activation provides backup protection for the steam line break accident.

The total response times of the OTΔT trip and steam flow in two steam lines - high coincident with T_{avg} -low-low ESF actuation consist of components that are measured at the frequency specified in the Surveillance Requirements (i.e., RTD response, electronics, and actuated components delay times) and times determined analytically (fluid transport time in the bypass line and bypass line heat capacitance lag). Thus the technical specification limiting condition for operation (LCO) lists the measured response times. These do not account for the time required for fluid transport from the entrances of the bypass lines to the RTD and for the heat capacitance of the bypass lines. For the accident analyses, an additional 2 seconds is added to the response times given in the technical specifications to account for analytically determined components. Following the proposed modification there will be no need to account for bypass line fluid transport time and heat capacitance. The fluid transport time in and heat capacitance of the hot leg scoops, however, will still need to be accounted for. This time will be no more than 0.25 seconds. Hence, the OTΔT and steam flow in two steam lines - high coincident with T_{avg} - low-low EFS response time listed in Table 3.3-2 and 3.3-5 respectively can be increased 1.75 seconds without increasing the overall response times and without invalidating the existing safety analyses.

The proposed change involves removal of the existing bypass lines and replacement of the existing RTDs with thermowell RTDs. Three dual element RTDs will be used for each hot leg. These will be located in the existing scoops. One dual element thermowell RTD will be located in the existing pump cold leg penetration. The nozzles in the cross over legs for the bypass line return will no longer be used. A 3 inch schedule 160 butt weld cap will be installed at each nozzle to close it off.

The thermowells are pressure boundary parts which completely enclose the RTD. They will be shop hydrotested to 1.25 times the RCS design pressure. The external design pressure and temperature will be the RCS design temperature and pressure. The RTD is not part of the pressure boundary. The scoop, thermowell, cross over leg nozzle buttweld cap, and thermowell/scoop assembly will be analyzed to the ASME Boiler and Pressure Vessel Code, Section III, Class 1.

Additional changes have been made to achieve consistency between units. Primarily, a requirement for Auxiliary Feedwater Response Time has been added to Unit 1 to achieve consistency with Unit 2 and the Westinghouse Standard Technical Specifications (WSTS). Item 14 - Station Blackout was added to Unit 2 to achieve consistency with Unit 1 and the WSTS. Other typographical errors were corrected on the Unit 1 Technical Specifications, again to be consistent with Unit 2.

The 10 CFR 50.92 evaluation addressing the basis for no significant hazards determination is attached after this Description of Amendment Request. Detailed description of the proposed amendment request is contained in Licensing Report S-87-05 dated April 2, 1987, a copy of which is included for information in support of the licensing submittal.