

Docket 50-267

JUL 11 1983

Mr. O. R. Lee, Vice President
Electric Production
Public Service Company of Colorado
P. O. Box 840
Denver, Colorado 80201

Dear Mr. Lee:

We have reviewed Public Service Company's October 1, 1980 (P-80340) application to amend those sections of the Fort St. Vrain (FSV) Technical Specifications related to instrument setpoints. As a result of this review, we have a number of questions and would like to recommend a number of changes. We feel that it would be more efficient and effective for us to schedule a meeting to discuss these issues and have enclosed a proposed agenda for your consideration.

We request that you review the enclosure and then negotiate a mutually convenient meeting date through the NRC project manager. The meeting should be held at the location which has the most background data on setpoint methodology and analysis results and it is requested that it be scheduled within the next 60 days.

Since the additional changes to the Instrument Operating Requirements Tables of Specification LCO 4.4-1, which were submitted by letter dated April 19, 1983 (P-83148) will be partially superseded by the actions, we plan to take as mentioned above, we recommend that the future resubmittal of your October 1980 request also incorporate those applicable areas of this recent request. Therefore, we do not plan to take any separate action on the April 19, 1983, application at this time.

If you have any questions on this matter, please contact your NRC project manager.

Sincerely,

"Original Signed by:
G. L. MADSEN"

G. L. Madsen, Chief
Reactor Project Branch 1

Enclosure:
As stated

RPB1 *ew*
PWagner/cb
07/07/83

RPB1 *mm*
GMadsen
07/16/83

DRRP&EP
JGagliardo
07/19/83

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PDR ADOCK 05000267
P PDR

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Public Service Company of
Colorado

JUL 11 1983

bcc:

D. Eisenhut, D/DL, NRR
G. Lainas, DL, NRR
R. A. Clark, ORB-3, NRR
C. Trammell, ORB-3, NRR
J. Taylor, OELD
E. Jordan, OELD
T. Dunning, ICSB, NRR
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bcc distrib. by RIV:

RPB1

Resident Inspector

Section Chief (RPS-A)

P. Wagner, Proj. Mgr., RPB1

RIV File

JUN 23 1983

FORT ST. VRAIN
AGENDA FOR MEETING WITH PSC
ON PROPOSED TECHNICAL SPECIFICATION CHANGES

The staff has reviewed the proposed Technical Specification changes included in Public Service Company of Colorado letter dated October 1, 1980. Based on this review the staff has a number of questions and suggestions for changes which it would like to discuss with the licensee. The following items are proposed as an agenda for a meeting to facilitate the completion of the staff review of this matter.

1. The current practice used in standard technical specifications for Limiting Safety System Settings is to include two specified values in the tables on protection system setpoints. The values specified are the "Trip Setpoint" and "Allowable Value". The Allowable Value is that value of setpoint for which adequate margin for instrument errors exists to assure that safety action would occur at a value of the measured parameter consistent with the plant safety analysis. The Allowable Value therefore represents the limit of the "as found" value of a setpoint which is adequate to assure plant safety. The Trip Setpoint corresponds to that value of the setpoint which is more conservative than the Allowable Value by the error which could occur due to setpoint drift over the period of time between surveillance of the trip setting. The Trip Setpoint therefore represents the limit of the "as left" value of a setpoint which is adequate to assure that the actual setpoint would not be expected to exceed the allowable value in the time until the next surveillance of the trip setting. Thus, it is recommended that the protection system setpoints be specified in terms of an Allowable Value and a Trip Setpoint.

With regard to Reportable Occurrences, as found setpoints less conservative than the Allowable Value are reportable, but as found setpoints less conservative than the Trip Setpoint are not. The proposed technical specification defined Absolute Value as the limit at which the consequences of accidents have been analyzed. Further it is noted that the margin between the absolute value and the instrument trip setting is adequate to assure the instrument channel will trip and the protective action will occur before the absolute value is encountered, considering accumulated instrument channel inaccuracies. This definition is not consistent with your understanding that a Reportable Occurrence report is not required for trip points which are not within the tolerances of the Instrument Trip Settings, but do not exceed the Absolute Values specified in the tables. However, with regard to Technical Specifications, the staff sees no need to include absolute values in the tables on setpoints.

For the programmed trip setpoints, the present specification relates the trip setting relative to the normal value of the measured parameter as programmed by load. Since the technical specifications do not define the normal programmed value, the setpoint could be a matter of interpretation. Therefore it is recommended that the setpoint be

defined in terms of the load program signal similar to figure 7.1-14 and -15 in the FSAR. This would avoid any conflict with what the normal value should be and that which may actually exist at any given load.

Currently trip setpoints are specified as a value with a plus and minus tolerance. In contrast the use of Trip Setpoint and Allowable Value provides two values which are expressed as limits of either greater or less than as well as equal to the value specified. In this format, a limit is not placed on the used or existence of trip settings which are more conservative than the values specified. Thus the advantage of using this method over that which is currently used are the following:

- a) It removes the ambiguity in current specifications with regard to whether a trip setting at the specified tolerance limit is appropriate as an "as left" or "as found" value. As currently used, it would be interpreted to be the former. Thus there is a greater probability that drift could result in exceeding this limit when surveillance tests are performed.
 - b) The use of specified trip settings with an upper and lower limit further restricts the use of trip settings which are more conservative than required by safety analysis. The alternative suggested does not impose this restriction which is unnecessary from a safety standpoint and therefore provides greater flexibility for the licensee.
 - c) The use of Trip Setpoint and Allowable values are terms that have a recognized meaning in the context of their use and applicability which is not inherent in the current method of safety system settings. Further this is consistent with industry consensus as stated in ISA Standard S67.04-1982, "Setpoints for Nuclear Safety-Related Instrumentation Used In Nuclear Power Plants." This standard will be endorsed by an NRC Regulatory Guide in the near future.
2. In Attachment 2 of the proposed change it is noted that the instrumentation accumulated inaccuracy was determined by the least squares method utilizing manufacturers' published accuracy data. The staff requests a discussion on the various types of data that were used in this analysis and sample calculations. Specifically this should address test equipment accuracy, process measurement accuracy, environmental effects in addition to protection system component accuracy and drift rates.

3. In Attachment 6 of the proposed change, an analysis is provided to justify the fixed low feedwater flow setpoint of 10%. The inaccuracy of low values of flow is increased in part due to the square root relationship of measured differential pressure at the flow element. At 10% flow the differential pressure is 1% of that corresponding to 100% flow. Therefore, the analysis of the error associated with this setpoint is an example for which data should be provided. The case being made for a change in the fixed low feedwater flow setpoint is primarily one of detection of total loss of feedwater flow to a loop rather than protection of a sustained reduction in feedwater flow below normal conditions. In that the low feedwater flow trip programmed by circulator speed provides protection for reduced feedwater flow events, this approach does not appear to be unreasonable.
4. The operability requirements for plant protection system channels are currently specified in Tables 4.4-1 through 4.4-4. In many cases the operability requirements are more restrictive than that which has been applied to water reactors through the use of standard technical specifications. In some cases the limiting conditions for operation for some items appear to permit continued operations under conditions that are difficult to justify from a safety standpoint. Overall the requirements appear to lack an adequate degree of specificity and are subject to varying degrees of interpretation. Therefore, it is recommended that consideration be given to changing the Technical Specifications to bring them more in line with format and degree of specificity as used in current standard technical specifications for water reactors.

The benefit for the licensee to consider such a change appears to be the following:

- a) To reduce the ambiguity existing in the current technical specifications to avoid either a direct violation or the appearance of a violation of an LCO.
- b) To provide a more explicit definition of operability requirements which would allow less restrictive action to be taken and thereby improve plant availability.
- c) To demonstrate the recognition of the nonconservative aspects of current technical specification and management's willingness to take appropriate action on this safety significant matter.

Enclosed is a suggested change to LCO 4.4.1 which includes the staff's recommendations with regard to the format that could be used. The specifics included therein should not be taken as items for which the staff is making a specific recommendation applicable to Fort St. Vrain. We do believe that this example would be useful for discussion of an approach to correct the apparent problems with the current technical specifications.

5. In the proposed change, the setpoint for some channels were identified as Category III. Trip setpoints and allowable values should be provided for these items.
6. The staff would also like to discuss the form in which the programmed High Neutron Flux setpoint should be stated when subsequently incorporated following system modifications to provide a floating setpoint.
7. The Applicable Modes used to define the operability requirements of the plant protection system channels in Tables 4.4-5 through 4.4-8 are based upon the positions of the Reactor Mode switch and the Interlock Sequence switch. During start up, the 5% and 30% power rod withdrawal prohibits insure that the Interlock Sequence is in the correct position. However, during plant shutdown it is not clear when action might be taken to place the Interlock Sequence switch in the Low Power or Startup position. Since these positions of the Interlock Sequence switch have the effect of blocking certain safety functions a clear definition should be provided to specify plant conditions under which each switch position is allowable. From the standpoint of operating conditions defined in 2.0 of the plant technical specifications, it is noted that Low Power Operation is defined as operation above 0.001% but less than 2% of rated thermal power. In contrast, the Interlock Sequence switch is only placed in the Low Power position between about 5 to 30% power. This is an additional argument to clarify plant conditions for these switches.