

Table 3.5.1-1 (Cont'd)

OTHER SAFETY RELATED SYSTEMS

	1	2	3	4	5
<u>Functional Unit</u>	<u>No. of channels</u>	<u>No. of channels for system trip</u>	<u>Min. operable channels</u>	<u>Min. degree of redundancy</u>	<u>Operator Action if conditions of column 3 or 4 cannot be met</u>
2. Steam line break instrumentation control system (SLBIC) (a) SLBIC Control & Logic Channels	2	1	2	1	Notes 9, 5
3. Pressurizer level channels	2	N/A	2	1	Note 10
4. Emergency Feedwater flow channels	2/S.G.	N/A	1	0	Note 10
5. RCS subcooling margin monitors	2	N/A	1	0	Note 10
6. Electromatic relief valve flow monitor	2	N/A	1	0	Note 11
7. Electromatic relief block valve position indicator	1	N/A	1	0	Note 12
8. Pressurizer code safety valve flow monitors	2/valve	N/A	1/valve	0	Note 10
9. Degraded Voltage Monitoring (a) 4.16 KV Emergency Bus Undervoltage	2/Bus	1/Bus	2/Bus	0	Note 14
(b) 460 V Emergency Bus Undervoltage	*1/Bus	1/Bus	1/Bus	0	Notes 13, 14
10. Chlorine Detection Systems	2	1	2	0	Notes 17, 18

\*Two undervoltage relays per bus are used with a coincident trip logic (2-out-of-2)

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SIGNIFICANT HAZARDS CONSIDERATION  
(SHC) DETERMINATION

This proposed Technical Specification change request will modify Table 3.5.1-1 of the ANO-1 Technical Specification. This amendment is necessary so that the table will accurately reflect the number of instrument channels to monitor pressurizer level which will be available following the upcoming ANO-1 refueling. These modifications are being implemented so that AP&L may meet its commitments to the NRC pertaining to IE Bulletin 79-01B, 10CFR50 Appendix R, and Regulatory Guide 1.97. The design change to be implemented during the upcoming refueling will replace the existing system, consisting of three selectable pressure transmitter inputs, with two independent instrument channels. The modification will also provide environmentally qualified transmitters and RTDs and provide channelized safety grade power for the new instruments. This proposed change is descriptive only and does not affect the minimum number of channels required to be operable or the minimum degree of redundancy required by the Technical Specification. The change as proposed will leave the Technical Specification in compliance with the B&W Standard Technical Specification and reflect the recommendations for installed post accident monitoring instrumentation outlined in Regulatory Guide 1.97 "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Access Plant and Environs Conditions During and Following an Accident", in that Regulatory Guide 1.97 only requires two channels.

The proposed change is similar to example (vii) found in the April 6, 1983 Federal Register Vol. 48, No. 67, page 14870 which was considered not likely to involve Significant Hazards Considerations. The change was determined not to involve a SHC because the operation of Arkansas Nuclear One Unit 1 in accordance with these changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.
2. Introduce the possibility of a previously unanalyzed accident.
3. Involve a significant reduction in a margin of safety.

Bases

Based on the above, we conclude that this Technical Specification change does not involve a Significant Hazards Consideration.

## DISCUSSION OF CHANGE

Currently pressurizer level is displayed in the ANO-1 control room through the use of non-nuclear instrumentation (NNI). There are currently two pressurizer level indications provided in the control room, one whose power is supplied from NNI-X, and another whose power is supplied from NNI-Y (These two displays will be referenced as X and Y indications). Both of these level indications are temperature compensated through the use of a dual element RTD located in a single well in the pressurizer (one of the RTD's is powered from X and the other from Y). Uncompensated level is provided by three level transmitters whose inputs come from three separate taps in the pressurizer.

Two of these transmitters are powered from NNI-X, and one is powered from NNI-Y. The X indication is capable, through the use of manually operated transfer switches, of being fed level and temperature signals from any of the level and temperature transmitters. The Y indication is provided inputs solely from the Y powered level and temperature transmitters. Although the existing three transmitters are not independent, Technical Specification Table 3.5.1-1 currently describes this as a three channel system.

To accommodate the requirements of IE Bulletin 79-01B the level and temperature transmitting equipment located in the reactor building must be replaced during this upcoming outage. In addition, per Appendix R commitments for alternate shutdown capability, separate instrument loops, completely independent of the NNI system, are required for pressurizer level, which is considered a shutdown parameter. This modification is also required to be made by the end of the ANO-1 sixth refueling.

Finally in response to Regulatory Guide 1.97, AP&L has committed to install two redundant, single failure proof, class 1E instrument loops for pressurizer level by the end of the ANO-1 seventh refueling.

To comply with these commitments in an integrated fashion, AP&L developed a design change package to be implemented this outage. In order to comply with the redundancy and single failure proof requirements of Regulatory Guide 1.97, a new well has to be secured for a second redundant RTD. As there are no spare wells available in the pressurizer, one of the three level taps must be refitted with an RTD.

The level transmitters and RTDs currently in use are all to be replaced with qualified equipment this outage. The design change will also upgrade these instruments power supplies to class 1E standards. These qualified signals will also be input to the SPDS this outage to comply with Appendix R commitments.

Therefore, although we are reducing the overall number of level transmitters available, we are at the same time significantly improving the reliability of the remaining equipment.

Since we are improving the reliability of remaining pressurizer level instruments, and since we will continue to comply with the minimum number of instruments required to be operable per the current Technical Specification, we do not believe this change will significantly reduce the margin of safety which currently exists. The Technical Specification, as proposed, also complies with the current B&W generic Technical Specification and Regulatory Guide 1.97.

The complete upgrade of the pressurizer level indication to the control room will not be completed until the seventh refueling outage; however, subsequent modifications will not require Technical Specification modifications.