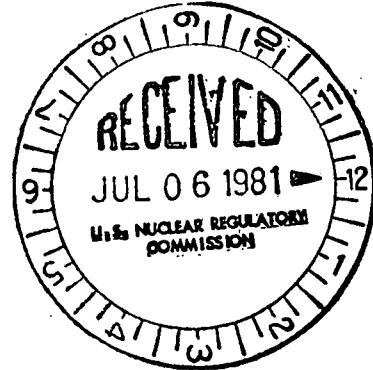




**Consumers
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July 3, 1981



Director, Nuclear Reactor Regulation
Att Mr Dennis M Crutchfield, Chief
Operating Reactors Branch No 5
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 -
PALISADES PLANT - SEP TOPIC V-11.A, ELECTRICAL, INSTRUMENTATION AND
CONTROL FEATURES FOR ISOLATION OF HIGH AND LOW PRESSURE SYSTEMS

By letter dated September 15, 1980, the NRC transmitted for comment a draft
evaluation of SEP Topic V-11.A. Subsequently, by letter dated May 27, 1981,
the staff transmitted a safety evaluation for this topic.

Consumers Power has completed a review of these documents and provides the
attached comments and corrections for your consideration.

Robert A Vincent
Staff Licensing Engineer

CC Director, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment (4 pages)

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ATTACHMENT 1

PALISADES PLANT SEP TOPIC V-11.A, ELECTRICAL INSTRUMENTATION AND CONTROL FEATURES FOR ISOLATION OF HIGH AND LOW PRESSURE SYSTEMS

The SEP Technical Evaluation Report (TER) for Topic V-11.A provides the results of a review to determine if the electrical instrumentation and control (EI&C) features used to isolate systems with a lower pressure rating than the reactor coolant primary system are in compliance with current licensing requirements. Current guidance for isolation of high and low pressure systems is contained in the Standard Review Plan (SRP) Section 6.3 for the Emergency Core Cooling Systems (ECCS), Branch Technical Position (BTP) RSB-5-1 for Residual Heat Removal (RHR) Systems, and BTP EICSB-3 (now ICSB-3) for all other systems. The criteria is briefly stated in the TER.

The TER's "Discussion and Evaluation" and "Summary" were reviewed for accuracy by Consumers Power Company. The need for several corrections and/or additions was discovered and these are itemized below.

Corrections And/Or Additions

The TER Section 3.0 "Discussion and Evaluation" identifies three systems which have a direct interface with the RCS pressure boundary and have a design pressure rating of all or part of the system which is less than that of the RCS.

Our review shows an additional system, the Radioactive Waste Treatment system, which has a direct interface with the RCS. A discussion and evaluation of this interface is addressed later and should be added as Section 3.4 in the TER.

TER Section 3.1 "Residual Heat Removal System" is addressed in SEP Topic V-11.B. Refer to that topic for the EI&C Evaluation Report and to Consumers Power Company letter dated May 15, 1981 for our comments on that topic.

TER Section 3.2 "Safety Injection System" has two statements that need correction for better understanding and accuracy. Correction: In the second paragraph, the sentence "Isolation is provided by two check valves in series for each safety injection loop" should read "Isolation is provided by two check valves in series, one in each of the four common injection headers and one in each header supply branch line." Correction: In the third paragraph, the sentence "Isolation is provided by an MOV in series with two check valves in each of the branches" should read "Isolation is provided by an MOV in each of the branches in series with two check valves, one in each branch line and one in each of the four common injection headers."

TER Section 3.3 "Chemical and Volume Control System" has two incorrect statements. Correction: In the second paragraph, it is stated that one valve is in series with three parallel valves. It is assumed that the three parallel valves that are being referred to are CV-2003, CV-2004 and CV-2005 as shown on P&ID M-202. This P&ID also shows a fourth valve, CV-2002, in parallel with the other three. Correction: The second paragraph also states that none of the valves has

interlocks to automatically close if the pressure exceeds the design rating of the low pressure portions of the system. CV-2002 has redundant pressure switches (PS-0220 & 0221) which close the valve at 500 psi in the low pressure section of piping. The low pressure piping is rated 600 psi.

As identified above, a fourth system, Radioactive Waste Treatment, should be added to the Discussion and Evaluation as Section 3.4. P&ID M-203 shows pressure control valves (CV-3038, 3042, 3046, 3047) located between the Safety Injection Tank check valves and the RCS check valves for each tank. These valves are controlled by pressure indicating controllers and are used for leakage testing of the check valves as described in the FSAR Section 6.1.3.1. Isolation is provided by these valves in series with the RCS check valves. The four air operated control valves have position indication in the control room. Sufficient interlocks exist to prevent opening or to automatically close if the pressure exceeds the design rating of the low pressure portions of this system. This portion of the Radioactive Waste Treatment System is not in compliance with current licensing guidances contained in BTP ICSB-3 since the RCS check valves don't have position indication in the control room.

The TER Section 4.0 "Summary" also requires the addition of a reference to the Radioactive Waste Treatment Systems and the addition of Item (4). Item (4) should read "The RCS check valves have no position indication available in the control room as identified in licensing guidance BTP ICSB-3.

The remainder of the statements in the "Discussion and Evaluation" and "Summary" are correct except for the numerous references to current licensing requirements. Branch Technical Positions and Standard Review Plans are current guidance not current licensing requirements.

Deviations from Current Licensing Guidances

Table I, attached, lists the system interface, the equipment involved, the P&ID, the current licensing guidance and the deviation from that guidance. Refer to Topic V.11.B for a list of deviations with regard to the RHR system.

Justification for Deviations

CV-2001, 2003, 2004, 2005 - CV-2003, 2004, 2005 are interlocked with the pressurizer level in the letdown system. These valves discharge into restricting orifices which drop the pressure to approximately 460 psia at 40 gpm. This pressure is less than the rating of the intermediate pressure letdown system. Plant procedure SOP 2A requires isolation valves, CV-2009, 2012, to be opened prior to opening CV-2003, 2004 or 2005 to ensure that a flow path is established to permit the required pressure drop. The intermediate pressure letdown piping also has a relief valve, RV-2006, which is set to relieve at 600 psia.

The administrative controls, restricting orifices and relief valve provide more than redundant assurance that the pressure in the intermediate pressure section of the letdown system is maintained below the system rating. Therefore, the existing interface at CV-2001, 2003, 2004, 2005 meets the intent of the licensing guidelines.

CV-2113, 2115, 2117 - The pressure rating for the piping system between the discharge of the charging pumps and these valves is the same as the primary coolant system. Therefore, there is no need to provide pressure interlocks for these valves. The licensing guidelines are not applicable for this interface.

3-2" Discharge Check Valves - Same as for CV-2113, 2115, 2117 above. There is no need to provide position indication for these check valves. The licensing guidelines are not applicable for this interface.

MO-3007, 3009, 3011, 3013 & Related 2" Outboard Check Valves - These valves provide the interface between the HPSI system and the PCS. The MOs do not have pressure interlocks, and therefore, do not meet the guidelines in SRP 6.3. However, if pressure interlocks are installed on these valves, they may have an adverse effect on the plant response in LOCA situations. The HPSI delivery time could be delayed as a result of the proposed interlocks. These interlocks should be evaluated on an individual case basis as suggested by ICSB-3.B.5 prior to implementation.

It should also be noted that these motor-operated valves do not open automatically until PCS pressure drops to 1600 psi and initiates a safety injection signal. Since the design pressure of the HPSI system discharge piping is 1600 psi, the PCS pressure which initiates SIS would not overpressurize this piping even if both downstream isolation check valves failed open.

Periodic check valve testing to assure their isolation capability is being addressed in response to the Order for Modification of Palisades License dated April 20, 1981.

MO-3008, 3010, 3012, 3014 & Related 6" Outboard Check Valves - These valves provide the interface between the LPSI system and the RCS. These valves are also considered in the review of RHR Interlock Requirements - Topic V-11.B. A discussion of the MOs can be found in our review of that topic.

The check valves were not addressed in that topic. Periodic check valve testing to assure their isolation capability is being addressed in response to the Order for Modification of Palisades License dated April 20, 1981.

MO-3062, 3064, 3066, 3068 & Related 2" Outboard Check Valves - These valves are part of the redundant HPSI line. The majority of this piping has the same pressure rating as the RCS and the charging line. The line does interface with the lower pressure HPSI line through the normally open valve CV-3036. The lower pressure line is protected by relief valve RV-3267 which is set to relieve at 1600 psia.

As discussed above with MO-3007, these motor-operated valves do not open automatically until PCS pressure drops to 1600 psi and initiates an SIS signal. Since the design pressure of the lower pressure HPSI piping is 1600 psi, the PCS pressure which initiates SIS would not overpressurize this piping even if both downstream check valves failed open.

4-12" RCS Check Valves - These check valves are used in series with CV-3038, 3042, 3046, 3047 for the interface between the RCS and the Radioactive Waste Treatment System. As noted in the TER, BTP ICSB-3 requires position indication on the series valves between the RCS and other systems. The check valves do not have position indication but they are effectively leak tested continuously during plant operation.

The ability to test the valves permits this interface to fully comply with the BTP guidelines.

TABLE I
LIST OF EQUIPMENT NONCOMPLIANCES WITH
CURRENT LICENSING GUIDANCES

<u>SYSTEM</u>	<u>EQUIPMENT</u>	<u>P&ID</u>	<u>LICENSING GUIDANCE</u>	<u>NONCOMPLIANCE</u>
CVCS	CV-2001 CV-2003 CV-2004 CV-2005 CV-2113 CV-2115 CV-2117	M-202	BTB ICSB-3	No Pressure Interlocks
CVCS	3-2" Discharge Check Valves	M-202 (B-8,C-8)	BTB ICSB-3	No Position Indication in Control Room
SIS	MO-3007,3009 3011,3013 MO-3008,3010 3012,3014 MO-3068,3066 3064,3062	M-203	SRP 6.3	No Pressure Interlocks
SIS	3 - 2" Outboard Check Valves	M-203	SRP 6.3	Not Testable
SIS	4 - 6" Outboard Check Valves	M-203	SRP 6.3	Not Testable
RWTS	4 - 12" RCS Check Valves	M-203 (A-7, B-7, C-7)	BTB ICSB-3	No Position Indication

CVCS = Chemical and Volume Control System
SIS = Safety Injection System
RWTS = Radioactive Water Treatment System