

NOV 21 1984

MEMORANDUM FOR: Thomas M. Novak, Assistant Director for Licensing  
Division of Licensing

FROM: R. Wayne Houston, Assistant Director for Reactor Safety  
Division of Systems Integration

SUBJECT: REVISION OF ICSB INPUT TO SER - BEAVER VALLEY UNIT 2

Plant Name: Beaver Valley 2  
Docket No.: 50-412  
Licensing Status: OL  
Responsible Branch: LB #3  
Project Manager: B. K. Singh  
Review Branch: ICSB  
Review Status: Incomplete

In our memorandum dated October 22, 1984, we provided ICSB's input to the SER for Beaver Valley Unit 2. Per discussions with M. Ley, we are providing, as Enclosure 1, marked-up copies of SER sections which require revision as a result of our review of the applicant's recent responses to several open items and information presented in Amendments 7 and 8 to the Beaver Valley Unit 2 FSAR. A SALP input is also provided as Enclosure 2.

Original Signed By *J. Law*  
R. Wayne Houston

R. Wayne Houston, Assistant Director  
For Reactor Safety  
Division of Systems Integration

Enclosures:  
As stated

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and on those areas that have been of concern during reviews of other similar plants. A meeting was held with the applicant and the NSSS and BOP designers to clarify the design and to discuss concerns the staff has with the design. Detail drawings--including piping and instrumentation diagrams, logic diagrams, control wiring diagrams, electrical one-line diagrams, and electrical schematic diagrams--were audited during the review.

#### 7.1.3 General Conclusion

The applicant has identified the instrumentation and control systems important to safety and the acceptance criteria that are applicable to those systems as identified in the SRP. The applicant has also identified the guidelines--including the regulatory guides and the industry codes and standards--that are applicable to the systems as identified in FSAR Table 7.1-1.

Based on the review of FSAR Section 7.1, the staff concludes that the implementation of the identified acceptance criteria and guidelines satisfies the requirements of GDC 1, "Quality Standards and Records", with respect to the design fabrication, erection, and testing to quality standards commensurate with the importance of the safety functions to be performed. The staff finds that the NSSS and the BOP instrumentation and control systems important to safety, addressed in FSAR Section 7.1, satisfy the requirements of GDC 1 and, therefore, are acceptable.

#### 7.1.4 Specific Findings

##### 7.1.4.1 Open Items

The staff's conclusions apply to the instrumentation and control systems important to safety with the exception of the open items listed below. The staff will review these items and report their resolution in a subsequent version of this report. The applicable sections of this report that address these items are indicated in parentheses following each open item.

~~Design of Reactor Trip Using Churn Cold Trip~~  
~~Attachment (7.2.2.2)~~

1. Service Water System Isolation on Low Header Pressure (7.3.3.4)

~~2. Control Room Isolation (7.3.3.9)~~

2. Steam Generator Level Control and Protection (7.3.3.12)

~~3. Remote Shutdown Capability (7.3.3.11)~~

3. Bypass and Inoperable Status Panel (7.5.2.4)

~~4. Primary Component Cooling Water Isolation from Reactor Coolant Pump Thermal Protection (7.5.2.3)~~

~~5. Control System Failure Caused by Malfunctions of Common Power Supply Instrument Line (7.5.2.5)~~

#### 7.1.4.2 Confirmatory Items

In a number of cases, the applicant has committed to provide additional documentation to address concerns raised by the staff during its review. Based on information provided during meetings and discussions with the applicant, the technical issue has been resolved in an acceptable manner. However, the applicant must formally document his commitments for resolution of these items. The sections of this report that address these items are indicated in parentheses.

1. Design Modification for Automatic Reactor Trip Using Shunt Coil Trip Attachment (7.2.2.3)

2. Service Water System Isolation on Low Header Pressure (7.3.3.4)

~~3. Main Feedwater Isolation (7.3.3.7)~~

~~4. Control Room Isolation on High Pressure Signal (7.3.3.9)~~

3. Automatic Opening of Service Water System Valves MOV 113C and 113D (7.3.3.10)
4. IE Bulletin 80-06 Concerns (7.3.3.13)
5. Remote Shutdown Capability (7.4.2.1)
6. NUREG-0737 Item II.F.1 Accident Monitoring Instrumentation Positions (4), (5), and (6) (7.5.2.2)
7. Bypass and Inoperable Status Panel (7.5.2.4)
8. Cold Leg Accumulator Motor-Operated Valve Position Indication (7.6.2.4)
9. NUREG-0737 Item II.K.3.9, Proportional Integral Derivative (PID) Controller Modification (7.7.2.1)
10. *CONTROL SYSTEM FAILURE CAUSED BY MALFUNCTIONS OF COMMON POWER SOURCE OR INSTRUMENT LINE (7.7.2.3)*
- 7.1.4.3 Technical Specification Items

Items to be included in the plant Technical Specifications and information to be audited as part of the effort to issue Technical Specifications are discussed in the following sections:

1. Lead, Lag, and Rate Time Constant Setpoints Used in Safety System Channels (7.2.2.1)
2. Turbine Trip Following A Reactor Trip (7.2.2.2)
3. Trip Setpoint and Margins (7.2.2.4)
4. NUREG-0737 Item II.K.3.10, Proposed Anticipatory Trip Modification (7.2.2.5)
5. Undetectable Failure in Online Testing Circuitry for Engineered Safeguards Relays (7.3.3.3)

that automatic shunt trip actuation would not provide substantial, additional protection if incorporated into the plant design. The staff found this response unacceptable. In a September 7, 1984 response, the applicant committed to provide the Westinghouse Owners Group generic design modification. The staff finds this acceptable, but considers <sup>THIS A CONFIRMATORY ITEM</sup> ~~the issue on suspension~~ until the modification installation is completed.

In addition, the staff has identified additional information required on a plant specific basis as part of the acceptance of the generic modification. The staff considers the submittal of the required information and an FSAR revision covering the modification to be a confirmatory item.

#### 7.2.2.4 Trip Setpoint and Margins

The setpoints for the various functions in the reactor trip system are determined on the basis of the accident analysis requirements. As such, during any anticipated operational occurrence or accident, the reactor trip maintains system parameters with the following limits:

- (1) minimum departure from nucleate boiling ratio of 1.30.
- (2) maximum system pressure of 2750 psi (absolute).
- (3) fuel rod maximum linear power of 18.0 kW per foot.

The staff requested detailed information on the methodology used to establish the technical specification trip setpoints and allowable values for the Reactor Protection System (including Reactor Trip and Engineered Safety Feature channels) assumed to operate in the FSAR accident and transient analyses. This includes the following information:

- (1) The trip setpoint and allowable value for the Technical Specifications.
- (2) The safety limits necessary to protect the integrity of the physical barriers which guard against uncontrolled release of radioactivity.



- (1) The 4/4 logic, although redundant in each RPS train, has four input channels developed from position switch contacts on the four turbine stop valves. The installation of the stop valve position contacts and their cable routing to the RPS input cabinets do not preclude a single failure from preventing either train from performing its safety function.
- (2) The sensors and stop valve contacts are not qualified to operate in a seismic event.

In response to the staff's first concern, the applicant stated, in a February 21, 1984 letter, that the reactor trip on turbine low auto stop oil pressure provides a diverse backup for the trip on stop valve closure. The applicant also reiterated that this trip is anticipatory, is included for the protection of the turbine equipment, and no credit is taken for this trip in any FSAR Chapter 15 accident analysis. The staff finds the applicant's response acceptable and considers this concern resolved.

In response to the staff's second concern, the applicant stated in an August 9, 1984 letter, that the pressure sensors and stop valve contacts fail in a safe direction (provide the trip) if they fail due to a seismic event. The staff finds the applicant's response acceptable and considers this issue closed.

### 7.2.3 Conclusions

We have conducted an audit review of the Reactor Trip (RTS) for conformance to guidelines of the applicable regulatory guides and industry codes and standards as outlined in the Standard Review Plan, Section 7.2, Part II and III. In Section 7.1 of this SER, we concluded that the applicant had adequately identified the guidelines applicable to these systems. Based upon our audit review of the design for conformance to the guidelines, we find that ~~upon satisfactory resolution of the issues identified in Section 7.1.2~~ there is reasonable assurance that the systems will conform to the applicable guidelines.

Our review has included the identification of those systems and components for the RTS which are designed to survive the effects of earthquakes, other natural phenomena, abnormal environments, and missiles. Based upon our review, we

Based on our review of the interfaces between the RTS and plant operating control systems, we conclude that the system satisfies the requirements of IEEE-279 with regards to control and protection system interaction. Therefore, we find that the RTS satisfies the requirements of GDC-24, "Separation of Protection and Control Systems."

Based on our review of the Reactor Trip System, we conclude that the system satisfies the protection system requirements for malfunctions of the reactivity control system, such as accidental withdrawal of control rods. Section 15 of the SAR addresses the capability of the system to assure that fuel design limits are not exceeded for such events. Therefore, we find that the RTS satisfies the requirements of GDC-25, "Protection System Requirements for Reactivity Malfunction."

Our conclusions, noted above, are based upon the requirements of IEEE-279 with respect to the design of the RTS. Therefore, we find that the RTS satisfies the requirement of 50.55a(h) with regards to IEEE-279.

Our review of the RTS has examined the dependence of this system on the availability of essential auxiliary support (EAS) systems. Based on our review, we conclude that the design of the RTS is compatible with the functional performance requirements of EAS systems. Therefore, we find the interfaces between the RTS design and the design of the EAS systems to be acceptable.

In summary, the staff concludes that the design of the Reactor Trip System (RTS) and the design of the essential auxiliary support (EAS) systems are acceptable and meet the relevant requirements of General Design Criteria 2, 4, 20, 21, 22, 23, 24, and 25, and 10 CFR Part 50, 50.55a(h), ~~subject to resolution of the open item identified in Section 7.2.2.9 of this report.~~

### 7.3 Engineered Safety Features Systems

#### 7.3.1 Engineered Safety Features Actuation System (ESFAS)

The ESFAS is a portion of the plant protection system that monitors selected plant parameters and, on detection of out-of-limit conditions of these parameters,

feedwater isolation provided by this signal is not assumed in Chapter 15 of the FSAR and is not necessary for safety and is therefore not required to be redundant. The staff has reviewed the applicant's response and finds that since there is no current basis to apply additional regulatory requirements, the design is acceptable and considers this issue closed.

Additionally, FSAR Figures 7.2-1 (Sheet 13) and 7.3-18 <sup>did</sup> ~~do~~ not agree with the information (discussed above) provided by the applicant. ~~The staff considers the revision of these FSAR figures to agree with the final design to be a confirmatory item.~~ *IN RESPONSE TO THIS ISSUE, THE APPLICANT REVISED THESE FIGURES IN AMENDMENT B TO THE FSAR TO ELIMINATE THE CONFLICTS. THE STAFF CONSIDERS THIS MATTER CLOSED.*

#### 7.3.3.8 Control Room Isolation

The applicant had indicated that the design of the control room and pressurization system was incomplete during a December 1983 meeting. Based on our review of preliminary information, the staff expressed a concern that the design, which is integrated into the current control room isolation and pressurization system, may not meet the requirements of GDC-5, "Sharing of Structures, Systems, and Components."

The staff requested detailed schematic drawings be provided for this system when the design was finalized. In a September 7, 1984 letter, the applicant provided information on the design and the interrelationship between Unit 1 and Unit 2. The staff ~~has~~ reviewed this information and required additional information covering testability of the system. ~~THIS IS AN OPERATIONAL~~ *IN A SUBSEQUENT DISCUSSION THE APPLICANT INDICATED THE SYSTEM COULD BE TESTED DURING NORMAL OPERATION WITH NO ADVERSE EFFECTS. THE STAFF CONSIDERS THIS ISSUE CLOSED.*

#### 7.3.3.9 Control Room Isolation on High Radiation Signal

During the staff's review of the control room isolation system, a conflict was found between the plant schematics and the information provided by FSAR Figures 7.2-1 (Sheet 8) and 7.3-13. These figures show that the control room <sup>was</sup> ~~is~~ isolated by a high radiation signal which <sup>was</sup> ~~is~~, according to the applicant, in error. ~~THIS ITEM IS CONFIRMATORY SUBJECT TO REVISION OF THE FSAR TO ELIMINATE THIS ERROR.~~ *THE APPLICANT REVISED THESE FIGURES IN AMENDMENT B TO THE FSAR TO ELIMINATE THESE ERRORS. THE STAFF CONSIDERS THIS ISSUE RESOLVED.*



system and initiates operation of these systems. The ESF control system regulates the operation of the ESF system following automatic initiation by the protection system or manual initiation by the plant operator.

We have conducted an audit review of these systems for conformance to guidelines of the applicable Regulatory Guides and industry codes and standards as outlined in the Standard Review Plan, Section 7.3, Parts II and III. In Section 7.1 of this SER we concluded that the applicant had adequately identified the guidelines applicable to these systems. Based upon our audit review of the system design for conformance to the guidelines, we find that upon satisfactory resolution of the open items identified in Sections 7.3.3.4, ~~7.3.3.5~~ and 7.3.3.12 there is reasonable assurance that the systems conform to the applicable guidelines.

Our review has included the identification of those systems and components for the ESFAS and ESF control systems which are designed to survive the effects of earthquakes, other natural phenomena, abnormal environments and missiles. Based upon our review, we conclude that the applicant has identified those systems and components consistent with the design bases for the systems. Sections 3.10 and 3.11 of this SER addressed the qualification programs to demonstrate the capability of these systems and components to survive applicable events. Therefore, we find that the identification of the systems and components satisfies this aspect of the GDC-2, "Design Bases for Protection Against Phenomena," and GDC-4, "Environmental and Missile Design Bases."

Based on our review, we conclude that that ESFAS conforms to the design bases requirements of IEEE-279. The system includes the provisions to sense accident conditions and anticipated operational occurrences to initiate the operation of ESF and EAS systems consistent with the analyses presented in Chapter 15 of the SAR. Therefore, we find that the ESFAS satisfies the requirements of GDC-20, "Protection System Functions."

The ESFAS adequately conforms to the guidance for periodic testing in Regulatory Guide (RG) 1.22 and IEEE-338 as supplemented by Regulatory Guide 1.118. The bypassed and inoperable status indication adequately conforms

requirements of EAS systems. Therefore, we find the interfaces between the ESFAS and ESF control systems and the EAS systems to be acceptable.

Our review of the ESF control systems included conformance to the requirements for testability, operability with onsite and offsite electrical power, and single failures consistent with the General Design Criteria applicable to these ESF systems. We conclude that the ESF control systems are testable and are operable on either onsite or offsite power (assuming only one source is available) and that the controls associated with redundant ESF systems are independent and satisfy the requirements of the single failure criterion. Therefore, we find the ESF control systems meet the relevant requirements of GDC-34, "Residual Heat Removal," and GDC-35, "Emergency Core Cooling," GDC-38, "Containment Heat Removal," and GDC-41, "Containment Atmosphere Cleanup."

In summary, the staff concludes that the ESFAS and the ESF control systems will be acceptable and meet the relevant requirements of General Design Criteria 2, 4, 20 thru 24, 34, 35, 38, and 41 and 10 CFR Part 50.55a(h) subject to resolution of the open items identified in Sections 7.3.3.4~~X~~ ~~7.3.3.4~~ and 7.3.3.12 of this report.

#### 7.4 Systems Required for Safe Shutdown

##### 7.4.1 System Description

This section describes the equipment and associated controls and instrumentation of systems required for safe shutdown. It also describes controls and instrumentation outside the main control room that enable safe shutdown of the plant in case the main control room needs to be evacuated.

##### 7.4.1.1 Safe Shutdown Systems

Securing and maintaining the plant in safe shutdown condition can be achieved by appropriate alignment of selected systems that normally serve a variety of operational functions. The functions which the systems required for safe shutdown must provide are:

Review Plan (SRP) Section 7.4 interprets the GDC-19 requirements. The design should provide redundant safety grade capability to achieve and maintain safe shutdown from a location or locations remote from the control room, assuming no fire damage to any required systems and equipment and assuming no accident has occurred. The remote shutdown equipment should be capable of maintaining functional operability under all service conditions postulated to occur including the seismic event. The remote shutdown station and the equipment used to maintain safe shutdown should be designed to accommodate a single failure.

In the FSAR Section 7.4.1.3, the applicant states that the design basis for control room evacuation does not consider a single failure. The staff found the applicant's design basis for remote shutdown capability unacceptable and required that the applicant clarify the design criteria for remote shutdown and address the isolation, separation, qualification and transfer/override provisions of the remote shutdown equipment in Section 7.4 of the FSAR.

In a June 13, 1984 response, the applicant stated that the next FSAR amendment will indicate that the design criteria for the control room evacuation includes the single failure criterion and coincident loss of offsite power. Additionally the applicant stated separation of redundant train-related and non-1E circuits is maintained by barriers or appropriate air space, all Class 1E control equipment (other than indicators) meet the requirements of IEEE-STD-344-1975 and IEEE-STD-323-1974, and that transfer to the ESF is accomplished by push-buttons and switches on the shutdown panel.

The staff ~~was~~ reviewed the applicant's response and <sup>found</sup> ~~it~~ acceptable with the exception of the seismic qualification of indicators of the ESP. The staff ~~was~~ requested additional information on this issue <sup>WHICH THE APPLICANT</sup> ~~and considers this an~~

~~open issue pending our review of the applicant's response~~ <sup>RESPONDED TO IN AN</sup>  
<sup>OCTOBER 11, 1984, letter. This issue is under review and its resolution will be</sup>  
<sup>addressed in Section 3.10 of this report.</sup>  
TP Additionally, the staff considers the applicant's pending FSAR amendment to include the information provided in the June 13, 1984 response to be a confirmatory item.

during shutdown including a shutdown following an accident. Equipment at appropriate locations outside the control room has been provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures. Therefore, we conclude that the systems required for safe shutdown satisfy the requirements of GDC-19, "Control Room."

Our review of the instrumentation and controls required for safe shutdown has examined the dependence of these systems on the availability of essential auxiliary support (EAS) systems. Based on our review and coordination with those having primary review responsibility for the EAS systems, we conclude that the design of EAS systems are compatible with the functional performance requirements of the systems reviewed in this section. Therefore, we find the interfaces between the design of safe shutdown systems and the design of EAS systems to be acceptable.

Our review of the instrumentation and control systems required for safe shutdown included conformance to the requirements for testability, operability with onsite and offsite electrical power, and single failures consistent with the General Design Criteria applicable to safe shutdown systems. We conclude that these systems are testable, and are operable on either onsite or offsite electrical power, and that the controls associated with redundant safe shutdown systems are independent and satisfy the requirements of the single failure criterion. Therefore, we find that these systems meet the relevant requirements of GDC-34, "Residual Heat Removal," GDC-35, "Emergency Core Cooling," and GDC-38, "Containment Heat Removal."

In summary, the staff concludes that the systems required for safe shutdown are acceptable and meet the relevant requirements of General Design Criteria 2, 4, 13, 19, 34, 35, and 38, ~~subject to satisfactory resolution of~~  
~~issues identified in Section 7.1.2.1 of this report.~~

PORV. If the staff does not accept the Westinghouse conclusions (under II.K.3.2 review), we will address this item in a supplement to this report.

#### 7.6.2.2 Reactor Coolant System Loop Isolation Valve Interlocks

The FSAR 7.6.6 describes the reactor coolant system loop isolation valve interlocks. The description was incomplete and additional information was required to clarify that the design is in conformance with IEEE STD-279 requirements. Additionally, the staff was concerned that, during operation with N-1 loops, the criteria for testing and single failure may not be met due to reduced protection logic.

In a July 12, 1984 letter, the applicant responded to this issue. The staff has reviewed the applicant's response and will pursue this issue as part of plant Technical Specifications review.

#### 7.6.2.3 Primary Component Cooling Water Isolation from Reactor Coolant Pump Thermal Barriers

The FSAR Section 9.2.2 describes the isolation of the reactor coolant pump thermal barriers from the primary component cooling water system. A check valve is installed in each inlet cooling water line to the thermal barrier cooling coil and an air-operated isolation valve is installed in each outline line. Each isolation valve closes on signals developed from a corresponding line's pressure or flow sensor. Because the FSAR ~~does~~<sup>did</sup> not provide the design basis for this isolation, the staff ~~was~~<sup>was</sup> concerned about its safety significance. Therefore, the staff request<sup>ed</sup> the applicant provide information about the design basis for this system and a discussion on the consequences of either the check valve or the air-operated isolation valve failing to close under conditions related to the design basis. ~~This is an open item.~~

**PP In an October 12, 1984, response, the applicant stated that these valves provide the second barrier isolating the RCS from the PCCW. THE STAFF HAS REVIEWED THIS RESPONSE AND CONSIDERS THIS ISSUE CLOSED.**

#### 7.6.2.4 Cold Leg Accumulator Motor-Operated Valve Position Indication

During the staff's review of the power lockout circuitry, a conflict was found between plant schematics and the information provided by FSAR Section 6.3.5.5. The FSAR states that the valve position indicating lights are powered by the



Based on our review of the interlock systems important to safety, we conclude that their design bases are consistent with the plant safety analysis and the systems' importance to safety. Further, we conclude that the aspects of the design of these systems with respect to single failures, redundancy, independence, qualification, and testability are adequate to assure that the functional performance requirements will be met.

Our review has included the identification of the systems and components of interlock systems important to safety which are designed to survive the effects of earthquakes, other natural phenomena, abnormal environments, and missiles. Based upon our review, we conclude that the applicant has identified the systems and components consistent with the design bases for the interlock systems. Sections 3.10 and 3.11 of this SER address the qualification programs to demonstrate the capability of these systems and components to survive applicable events. Therefore, we find that the identification of the systems and components satisfies this aspect of the GDC-2, "Design Bases For Protection Against Natural Phenomena," and GDC-4, "Environmental and Missile Design Bases."

In summary, the staff concludes that the interlock systems important to safety are acceptable, ~~subject to satisfactory resolution of open items identified in Section 7.6.2.2 of this report.~~

## 7.7 Control Systems

The general design objectives of the Plant Control System are:

- (1) To establish and maintain power equilibrium of the primary and secondary system during steady state unit operation;
- (2) To constrain operational transients so as to preclude unit trip and re-establish steady-state unit operation; and
- (3) To provide the reactor operator with monitoring instrumentation that indicates all required input and output control parameters of the systems and provides the capability of assuming manual control of the system.

### 7.7.2.3 Control System Failure Caused by Malfunctions of Common Power Source or Instrument Line

To provide assurance that the FSAR Chapter 15 analyses adequately bounds events initiated by a single credible failure or malfunction, the staff has asked the applicant to identify any power source or sensors that provide power or signals to two or more control functions, and demonstrate that failures or malfunctions of these power sources or sensors will not result in consequences more severe than those of Chapter 15 analyses or beyond the capability of operator or safety systems.

The staff ~~has~~ reviewed the applicant's response, contained in Amendment 4 to the FSAR, and ~~found~~<sup>found</sup> it needs further clarification in the following areas:

- (1) The applicant's response ~~is~~<sup>was</sup> based on the satisfactory review of this issue on other Westinghouse plants. A statement ~~is~~<sup>was</sup> needed to address the similarity of BV-2 to the other referenced plants as pertaining to this issue.
- (2) Where similarity does not exist, further analysis should ~~be~~<sup>have been</sup> provided to properly address this issue.

~~This is an open item.~~ **THE APPLICANT, IN AN AUGUST 9, 1984, LETTER, COMMITTED TO CONDUCT A THOROUGH REVIEW OF THIS ISSUE SIMILAR TO REVIEWS PERFORMED FOR OTHER WESTINGHOUSE PLANTS. BASED ON THIS COMMITMENT, THE STAFF CONSIDERS THIS A CONFIRMATORY ITEM, SUBJECT TO A SATISFACTORY SUBMITTAL DOCUMENTING THE REVIEW**

7.7.3 Conclusions

The control systems used for normal operation that are not relied upon to perform safety functions but which control plant processes having a significant impact on plant safety, have been reviewed. These control systems include the reactivity control systems and the control systems for the primary and secondary coolant systems. The staff concludes that the control systems are acceptable and meet the relevant requirements of General Design Criteria 13, "Instrumentation and Control," and GDC-19, "Control Room." This conclusion is based on the following:

Based on our review of the plant transient response to normal load changes and anticipated operational occurrences, such as reactor trip, turbine trip, upsets in the feedwater and steam bypass systems, we conclude that the control systems are capable of maintaining system variables within prescribed operating limits. Therefore, we find that the control systems satisfy this aspect of GDC-13, "Instrumentation and Control."

Our review of control systems included the features of these systems for both manual and automatic control of the process systems. We conclude that the features for manual and automatic control facilitate the capability to maintain plant variables within prescribed operating limits. We find that the control systems permit actions which can be taken to operate the plant safely during normal operation, including anticipated operational occurrences; therefore, the control systems satisfy GDC-19, "Control Room," with regards to normal plant operations.

The conclusions of the analysis of anticipated operational occurrences and accidents as presented in Chapter 15 of the FSAR have been used to confirm that plant safety is not dependent upon the response of the control systems. We conclude ~~subject to resolution of the open item identified in Section 7.7.2 of this report~~ that failure of the systems of themselves or as a consequence of supporting systems failures, such as power sources, do not result in plant conditions more severe than those bounded by the analysis of anticipated operational occurrences.

Finally, we have confirmed that the consequential effects of anticipated operational occurrences and accidents do not result in control system failures that would cause plant conditions more severe than those bounded by the analysis of these events. We find that the control systems are not relied upon to assure plant safety and are, therefore, acceptable.

In summary the staff concludes that the control systems are acceptable. ~~subject to satisfactory resolution of the open item identified in Section 7.7.2 of this report~~

ENCLOSURE 2ICSB SALP INPUT

PLANT: Beaver Valley 2  
SUBJECT: Safety Evaluation Report

| EVALUATION CRITERIA                           | PERFORMANCE CATEGORY | BASIS  |
|---|----------------------|--|
| 1. Management Involvement                     | N/A                  | No basis for assessment.   |
| 2. Approach to Resolution of Technical Issues | 3                    | An understanding of the issues was frequently lacking. Resolutions are/were delayed due to the lack of understanding of the technical issues involved.                               |
| 3. Responsiveness                             | 3                    | Draft SER contained 23 open items. SER now contains 3 open items. Considerable NRC effort and repeated submittals were needed and are still needed to obtain acceptable resolutions. |
| 4. Enforcement History                        | N/A                  | No basis for assessment.   |
| 5. Reportable Events                          | N/A                  | No basis for assessment.   |
| 6. Staffing                                   | N/A                  | No basis for assessment.   |
| 7. Training                                   | N/A                  | No basis for assessment.   |