DEC 0 1 1983

5

MEMORANDUM FOR: Cecil Thomas, Chief
Standardization and Special Projects Branch
Division of Licensing

FROM: Brian W. Sheron, Chief
Reactor Systems Branch
Division of Systems Integration

SUBJECT: WESTINGHOUSE SP/90 REVIEW AND ACCEPTANCE REVIEW OF MODULE 1

References:
1. D. G. Eisenhut, to R. J. Mattson, "RESAR SP/90 Acceptance Review," et al, November 7, 1983.
2. "Reference Safety Analysis Report, Standard Plant for the '90's, RESAR-SP/90, Primary Side Safeguards System Module," Westinghouse Nuclear Energy Systems, October, 1983.
3. B. W. Sheron, to C. Thomas, "W APWR Module #1 Review," June 21, 1983.

Reference 1 requested an Acceptance Review of RESAR SP/90 Module 1. This memorandum provides the RSB response to that request.

We have reviewed the contents of Reference 2 with respect to the type of information expected in the document. It contains sufficient information so that a meaningful review can be performed upon which an SER can be based. Therefore, we find Reference 2 is acceptable for initiation of review.

The review will cover the Reference 2 Sections and topics listed in the Enclosure. We will also coordinate and interface with other branches as identified in the SRP and, in addition, as appropriate to the topics to be reviewed.

Our SER will provide conclusions when sufficient information has been provided by Westinghouse. When this is not the case, we will either identify the open issues where future review is required to insure that necessary information is to be presented in a future module, or; if the

CONTACT: WLyon, RSB
X29405

8312150218XA

OFFICE ➤							
NAME ➤							
DATE ➤							

With respect to the schedule which was sent to us as Enclosure 3 of Reference 1, we anticipate some difficulty although we will work toward a rapid review as the modules are received. The initial written material generated as a result of the review will be a compilation of questions pertinent to Module 1. These will be completed within six weeks. Reference 1 requested a draft SER within three months. As we explained in Reference 3, this would take of the order of four months, but some of the review work has already been accomplished. Three months would be reasonable if there were no other SP/90 work underway and if there was no need for questions. However, this is not the case. Other Modules are to be reviewed, as shown in the Reference 1 enclosures, and this will require an integrated effort.

Please advise us if there is any additional information that you require.

Original signed by:
Brian W. Sheron

Brian W. Sheron, Chief
Reactor Systems Branch, DSI

cc: [redacted]a

OFFICE	DSI:RSB	DSI:RSB	DSI:RSB				
NAME	WLyon:jf	JRosenthal	BSheron				
DATE	11/23/83	11/23/83	11/ /83				

OFFICIAL RECORD COPY

ENCLOSURE, RSB REVIEW RESPONSIBILITY

Section	Title
1.0	INTRODUCTION AND GENERAL DESCRIPTION OF THE PLANT
1.1	INTROD 'CTION
1.2	GENERAL PLANT DESCRIPTION
1.2.3.1	Primary Side Safeguards System
1.2.3.1.1	System Functions
1.2.3.1.2	System Description
1.2.3.1.2.1	Safety Injection
1.2.3.1.2.3	Normal Cooldown
1.2.3.1.2.4	Emergency Boration
1.2.3.1.2.5	System Testing
1.2.3.1.2.6	Feed and Bleed Emergency Core Cooling
1.3.1	Comparison With Similar Facility Designs
1.6	MATERIAL INCORPORATED BY REFERENCE
1.7.2	Piping and Instrumentation Diagrams
1.8	CONFORMANCE WITH THE STANDARD REVIEW PLAN
5.4.7	Residual Heat Removal System
5.4.7.1	Design Basis
5.4.7.2	System Design
5.4.7.2.1	Schematic Piping and Instrumentation Diagrams
5.4.7.2.2	Equipment and Component Descriptions
5.4.7.2.3	Control
5.4.7.2.4	Applicable Codes and Classifications
5.4.7.2.5	System Reliability Considerations
5.4.7.2.6	Manual Actions
5.4.7.3	Performance Evaluation
5.4.7.5	Instrumentation
6.3	EMERGENCY CORE COOLING SYSTEM

6.3.1	Design Basis
6.3.2	System Design
6.3.2.1	Schematic Piping and Instrumentation Diagrams
6.3.2.2	Equipment and Component Descriptions
6.3.2.2.1	High Head Pumps
6.3.2.2.2	Low Head Pumps
6.3.2.2.3	Accumulators
6.3.2.2.4	Core Reflood Tanks
6.3.2.2.5	Emergency Water Storage Tank (EWST)
6.3.2.2.6	Residual Heat Removal (RHR) Heat Exchangers
6.3.2.2.7	Low Head Pump Miniflow Heat Exchangers
6.3.2.2.8	Valves
6.3.2.5	System Reliability
6.3.2.5.1	Active Failure Criteria
6.3.2.5.2	Passive Failure Criteria
6.3.2.5.3	Detection and Termination of Leaks
6.3.2.5.4	Lag Times
6.3.2.5.5	Potential Boron Precipitation
6.3.2.7	Provisions for Performance Testing
6.3.2.8	Manual Actions
6.3.2.8.1	Recirculation Phase
6.3.2.8.2	Hot Leg Recirculation Phase
6.3.3	Performance Evaluation
6.3.3.1	Inadvertent Opening of a Steam Generator Relief or Safety Valve
6.3.3.2	Small Break Loss of Coolant Accident
6.3.3.3	Large Break Loss of Coolant Accident
6.3.3.4	Major Secondary System Pipe Failure
6.3.3.5	Steam Generator Tube Failure
6.3.3.6	Feedwater Systems Pipe Break
6.3.3.7	Inadvertent Operation of the Emergency Core Cooling System During Power Operation
6.3.4	Tests and Inspections
6.3.4.1	ECCS Performance Tests

6.3.4.2	Reliability Tests and Inspections
6.3.5	Instrumentation Requirements
6.3.5.1	Engineered Safeguards Actuation Signals
6.3.5.2	Instrumentaion
6.3.5.2.1	Pressure
6.3.5.2.2	Flow
6.3.5.2.3	Temperature
6.3.5.2.4	Level
6.3.5.2.5	Critical Function Valve Alarm
6.3.5.2.6	Monitor Lights
15.0	ACCIDENT ANALYSIS
15.5	INCREASE IN REACTOR COOLANT INVENTORY
15.5.1	Inadvertent Operation of the Emergency Core Cooling System During Power Operation
15.5.1.1	Identification of Causes and Accident Description
15.5.1.2	Conclusions
15.6	DECREASE IN REACTOR COOLANT INVENTORY
15.6.2	Break in Instrument Line or Other Line From Reactor Coolant Pressure Boundary That Penetrate Containment
15.6.2.1	Identification of Causes and Frequency Classification
15.6.4	LOCA Resulting From a Spectrum of Postulated Breaks Within RCS Pressure Boundary
15.6.4.1	Identification of Causes and Frequency Classification
15.6.4.2	Sequence of Events and Systems Operations
15.6.4.3	Core and System Performance
15.6.4.3.1	Mathematical Model
15.6.4.3.2	Input Parameters and Initial Conditions
15.6.4.3.3	Results
16.0	TECHNICAL SPECIFICATIONS