

PBAPS UFSAR

APPENDIX H - CONFORMANCE TO AEC (NRC) CRITERIA

TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>
H.1	<u>SUMMARY DESCRIPTION</u>
H.1.1	Restatement of Proposed General Design Criteria (GDC) (July 1967)
H.2	<u>CRITERIA CONFORMANCE</u>
H.2.1	Group I - Overall Plant Requirements (Criteria 1-5, Table H.2.1)
H.2.2	Group II - Protection by Multiple Fission Product Barriers (Criteria 6-10, Table H.2.2)
H.2.3	Group III - Nuclear and Radiation Controls (Criteria 11-18, Table H.2.3)
H.2.4	Group IV - Reliability and Testability of Protection Systems (Criteria 19-26, Table H.2.4)
H.2.5	Group V - Reactivity Control (Criteria 27-32, Table H.2.5)
H.2.6	Group VI - Reactor Coolant Pressure Boundary (Criteria 33-36, Table H.2.6)
H.2.7	Group VII - Engineered Safety Features (Criteria 37-65, Table H.2.7)
H.2.8	Group VIII - Fuel and Waste Storage Systems (Criteria 66-69, Table H.2.8)
H.2.9	Group IX - Plant Effluents (Criterion 70, Table H.2.9)
H.3	<u>EXTENDED POWER UPRATE (EPU) GENERAL DESIGN AND OTHER CRITERIA CONFORMANCE</u>
H.3.1	MATERIALS AND CHEMICAL ENGINEERING
H.3.1.1	Reactor Vessel Material Surveillance Program
H.3.1.2	Pressure-Temperature Limits and Upper-Shelf Energy
H.3.1.3	Reactor Internal and Core Support Materials
H.3.1.4	Reactor Coolant Pressure Boundary Materials
H.3.1.5	Protective Coating Systems (Paints) - Organic Materials
H.3.1.6	Flow-Accelerated Corrosion
H.3.1.7	Reactor Water Cleanup System
H.3.2	MECHANICAL AND CIVIL ENGINEERING
H.3.2.1	Pipe Rupture Locations and Associated Dynamic Effects
H.3.2.2	Pressure-Retaining Component and Component Supports
H.3.2.3	Reactor Pressure Vessel Internals and Core Supports
H.3.2.4	Safety-Related Valves and Pumps

PBAPS UFSAR

- H.3.2.5 Seismic and Dynamic Qualification of Mechanical and Electrical Equipment
- H.3.2.6 Replacement Steam Dryer Structural Integrity

- H.3.3 ELECTRICAL ENGINEERING
 - H.3.3.1 Environmental Qualification of Electrical Equipment
 - H.3.3.2 Offsite Power System
 - H.3.3.3 Alternating Current Onsite Power System
 - H.3.3.4 Direct Current Onsite Power System
 - H.3.3.5 Station Blackout

- H.3.4 INSTRUMENTATION AND CONTROLS
 - H.3.4.1 Reactor Protection, Safety Features Actuation, and Control Systems

- H.3.5 PLANT SYSTEMS
 - H.3.5.1 Internal Hazards
 - H.3.5.1.1 Flooding
 - H.3.5.1.1.2 Equipment and Floor Drains
 - H.3.5.1.1.3 Circulating Water Systems
 - H.3.5.1.2 Missile Protection
 - H.3.5.1.2.1 Internally Generated Missiles
 - H.3.5.1.2.2 Turbine Generator
 - H.3.5.1.3 Pipe Failures
 - H.3.5.1.4 Fire Protection
 - H.3.5.2 Fission Product Control
 - H.3.5.2.1 Fission Product Control Systems and Structures
 - H.3.5.2.2 Main Condenser Evacuation System
 - H.3.5.2.3 Turbine Gland Sealing System
 - H.3.5.3 Component Cooling and Decay Heat Removal
 - H.3.5.3.1 Spent Fuel Pool Cooling and Cleanup System
 - H.3.5.3.2 Station Service Water Systems
 - H.3.5.3.3 Reactor Auxiliary Cooling Water Systems
 - H.3.5.3.4 Ultimate Heat Sink
 - H.3.5.4 Balance-of-Plant Systems
 - H.3.5.4.1 Main Steam
 - H.3.5.4.2 Main Condenser
 - H.3.5.4.3 Turbine Bypass
 - H.3.5.4.4 Condensate and Feedwater
 - H.3.5.5 Waste Management Systems
 - H.3.5.5.1 Gaseous Waste Management System
 - H.3.5.5.2 Liquid Waste Management System
 - H.3.5.5.3 Solid Waste Management System
 - H.3.5.6 Additional Considerations
 - H.3.5.6.1 Emergency Diesel Engine Fuel Oil Storage and Transfer System
 - H.3.5.6.2 Light Load Handling System (Related to Refueling)

PBAPS UFSAR

- H.3.6 CONTAINMENT REVIEW CONSIDERATIONS
 - H.3.6.1 Primary Containment Functional Design
 - H.3.6.2 Sub-compartment Analysis
 - H.3.6.3 Mass and Energy Release Analysis for LOCA
 - H.3.6.4 Combustible Gas Control in Containment
 - H.3.6.5 Containment Heat Removal
 - H.3.6.6 Secondary Containment Functional Design
 - H.3.6.7 Containment Review Considerations
 - H.3.6.7.1 Containment Isolation
 - H.3.6.7.2 Generic Letter 89-13
 - H.3.6.7.3 Generic Letter 89-16
 - H.3.6.7.4 Generic Letter 96-06

- H.3.7 HABITABILITY, FILTRATION AND VENTILATION
 - H.3.7.1 Control Room Habitability System
 - H.3.7.2 Engineered Safety Feature Atmospheric Cleanup
 - H.3.7.3 Control Room Area Heating, Ventilation and Air Conditioning System
 - H.3.7.4 Spent Fuel Pool Area Ventilation System
 - H.3.7.5 Reactor, Turbine, Drywell and Radwaste Area Ventilation Systems
 - H.3.7.6 Engineered Safety Feature Heating, Ventilation and Air Conditioning Systems

- H.3.8 REACTOR SYSTEMS
 - H.3.8.1 Fuel System Design
 - H.3.8.2 Nuclear Design
 - H.3.8.3 Thermal and Hydraulic Design
 - H.3.8.4 Emergency Systems
 - H.3.8.4.1 Functional Design of Control Rod Drive System
 - H.3.8.4.2 Overpressure Protection During Power Operations
 - H.3.8.4.3 Reactor Core Isolation Cooling System
 - H.3.8.4.4 Residual Heat Removal System
 - H.3.8.4.5 Standby Liquid Control System
 - H.3.8.5 Accident and Transient Analyses
 - H.3.8.5.1 Decrease on Feedwater Temperature, Increase in Feedwater Flow, Increase in Steam Flow, and Inadvertent Opening of a Main Steam or Safety Valve
 - H.3.8.5.2 Decrease in Heat Removal by the Secondary System
 - H.3.8.5.2.1 Loss of External Load; Turbine Trip; Loss of Condenser Vacuum; Closure of Main Steam Isolation Valve; and Steam Pressure Regulator Failure (Closed)
 - H.3.8.5.2.2 Loss of Non-Emergency AC Power to the Station Auxiliaries
 - H.3.8.5.2.3 Loss of Normal Feedwater Flow
 - H.3.8.5.3 Decrease in Reactor Coolant System Flow
 - H.3.8.5.3.1 Loss of Forced Reactor Coolant Flow
 - H.3.8.5.3.2 Reactor Recirculation Pump Rotor Seizure and Reactor Recirculation Pump Shaft Break

PBAPS UFSAR

- H.3.8.5.4 Reactivity and Power Distribution Anomalies
 - H.3.8.5.4.1 Uncontrolled Control Rod Assembly Withdrawal from a Subcritical of Low Power Startup Condition
 - H.3.8.5.4.2 Uncontrolled Control Rod Assembly Withdrawal at Power
 - H.3.8.5.4.3 Startup of a Recirculation Loop at an Incorrect Temperature and Flow Controller Malfunction Causing an Increase in Core Flow Rate
 - H.3.8.5.4.4 Spectrum of Rod Drop Accidents
- H.3.8.5.5 Inadvertent Operation of ECCS or Malfunction that Increases Reactor Coolant Inventory
- H.3.8.5.6 Decrease in Reactor Coolant Inventory
 - H.3.8.5.6.1 Inadvertent Opening of a Pressure Relief Valve
 - H.3.8.5.6.2 Emergency Core Cooling System and Loss-of-Coolant Accidents
- H.3.8.5.7 Anticipated Transients Without Scrams
- H.3.8.6 Fuel Storage
 - H.3.8.6.1 New Fuel Storage
 - H.3.8.6.2 Spent Fuel Storage
- H.3.9 SOURCE TERMS AND RADIOLOGICAL CONSEQUENCES ANALYSES
 - H.3.9.1 Source Terms for Radwaste Systems Analyses
 - H.3.9.2 Radiological Consequences Using Alternate Source Term
- H.3.10 HEALTH PHYSICS
 - H.3.10.1 Occupational and Public Radiation Doses
- H.3.11 HUMAN PERFORMANCE
 - H.3.11.1 Human Factors

PBAPS UFSAR

APPENDIX H - CONFORMANCE TO AEC (NRC) CRITERIA

LIST OF TABLES

<u>TABLE</u>	<u>TITLE</u>
H.2.1	AEC (NRC) General Design Criteria - Group I (Overall Plant Requirements)
H.2.2	AEC (NRC) General Design Criteria - Group II (Protection by Multiple Fission Product Barriers)
H.2.3	AEC (NRC) General Design Criteria - Group III (Nuclear and Radiation Controls)
H.2.4	AEC (NRC) General Design Criteria - Group IV (Reliability and Testability of Protection Systems)
H.2.5	AEC (NRC) General Design Criteria - Group V (Reactivity Control)
H.2.6	AEC (NRC) General Design Criteria - Group VI (Reactor Coolant Pressure Boundary)
H.2.7	AEC (NRC) General Design Criteria - Group VII (Engineered Safety Features)
H.2.8	AEC (NRC) General Design Criteria - Group VIII (Fuel and Waste Storage Systems)
H.2.9	AEC (NRC) General Design Criteria - Group IX (Plant Effluents)