

Test Report



1.0 Objectives

The purpose of this analysis is to assess the system reliability following an initiating event. This analysis is an integral part of the Ratchford Nuclear One Probabilistic Risk Assessment (PRA). In addition to this central purpose, the analysis will also identify major contributors to system unreliability, potential common cause failure modes, and specific failures which may themselves be initiating events.

Include a paragraph describing the specific analysis objectives for this system

2.0 System Design

Introduce and use a simplified diagram(s) of the system to:

Describe the major system operating functions

Describe the major components of the system

Emphasizes the specific functions modeled in the PRA

3.0 System Boundaries

The system requires availability of several support systems for proper operation. These dependencies are discussed below:

Add sections in the following order describing dependencies (as applicable):

Air Systems

Cooling Water Systems

Electrical Power Systems

External Control Systems (signals)

Heat, Ventilation and Air Conditioning (HVAC) Systems

4.0 Instrumentation and Controls

Describe instrumentation and controls available for monitoring and controlling operation of the system.

Highlight ESFAS affects

Include any interlocks that preclude system/component operation.

5.0 Location Within Plant

Describe the buildings and elevations that house major components.

System routing that could potentially affected by external events should be highlighted.

6.0 Normal System Operation

Describe how the system operates during normal at-power plant operations.

7.0 Performance During Accident Conditions

Describe the system operation during accident conditions. Highlight event-specific operation as applicable.

8.0 Test and Maintenance

This section describes the test and maintenance activities performed to verify the system is capable of performing its intended function when required. Testing provides a periodic validation that the components and sub-systems are operable and cable of performing their design basis function. Testing also mitigates the potential for extended latent failures that would result in failure to operate when required. Maintenance provides rejuvenation of the maintained component so it is capable of performing when required or continue to perform its function (if normally operating). Both maintenance and test can result in conditions that render the equipment unavailable to perform its intended function depending on the nature and type of test and maintenance performed.

8.1 Testing

Describe the testing performed on the system. Include the frequency and type of test and associate any relevant procedure documentation. Indicate if the testing renders the sub-system or system unavailable.

8.2 Maintenance

Describe the maintenance performed on the system. Include the frequency and type of maintenance and associate any relevant procedure documentation. Indicate if maintenance renders the sub-system or system unavailable.

9.0 Technical Specification Limits

See the Technical Specifications for information regarding relevant operating limits for the system.

10.0 Operating Experience

11.0 Assumptions

11.1 System Design Assumptions

11.2 Operational Assumptions

11.3 Modeling Assumptions

12.0 Top Event Success Criteria

13.0 Fault Tree Analysis

13.1 Detailed Failure Analysis

Test Report



1.0 Objectives
13.2 Description of Fault Tree
13.3 Human Interactions
13.4 Reliability Data
13.5 Undeveloped Events
13.6 Denominator Estimates
14.0 Common Cause Assessment
15.0 Results
16.0 Review For Initiating Events
17.0 Insights
18.0 References