



Nuclear Automation

Automatic Alternate Seal Injection Initiation System

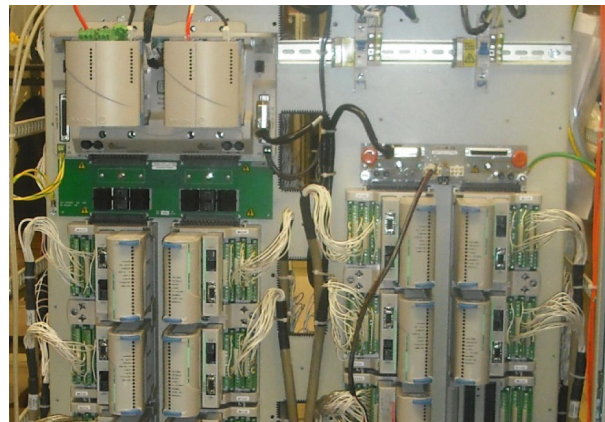
Background

The automatic alternate seal injection initiation system has been developed to reduce the burden on the operator and maintain reactor coolant system (RCS) inventory during abnormal conditions, including: Appendix R – Fire Protection (10 CFR 50.48 Appendix R and NFPA 805) and Loss of All AC Power (10CFR50.63). The automatic alternate seal injection initiation system provides a means for starting the plant's alternate seal injection flow without operator action following the loss of normal seal injection flow.

Description

The automatic alternate seal injection initiation system monitors redundant flow signals for seal injection flow. When a loss of normal seal injection flow is detected, the system allows the operator time to restore seal injection flow. If seal injection flow is not restored, the system will automatically start the plant's alternate seal injection system.

The automatic alternate seal injection initiation system is designed to provide that the alternate seal injection flow is initiated following the loss of all AC power, and is located in a different fire zone to provide that during a fire either the automatic seal injection initiation system or the operator is able to start the plant's alternate seal injection flow.



Automatic alternate seal injection initiation system

The automatic alternate seal injection initiation system can be provided as a turnkey product, including the following services:

- Licensing and 10 CFR 50.59 Support
- Preparation of the engineering change package
- Hardware installation
- Training

Benefits

- Allows operators the maximum amount of time to restore normal seal injection flow
- Provides an alternative and dedicated means for initiating the plant's alternate seal injection flow following a loss of normal seal injection flow
- Independently wired from main control room control fire zone
- Allows for consistent operator response for fire response and loss of all AC power
- Redundancy prevents inadvertent actuation from a single failure
- Continuous monitoring of trip logic
- Allows for online testing

Platform Features

- Can be provided as a stand-alone system or added to an existing Ovation® system
- Flexible equipment footprint allowing a wide range of installation options
- Fault tolerance within control algorithm logic
- Redundant architecture with automatic fail-over (power supplies, controllers)
- Continuous online self-diagnostics and alarming

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