



Salem Hope Creek
GENERATING STATIONS



Salem Service Water Simplification Project

Meeting w/ NRC Office of Nuclear Reactor Regulation

Location: Rockville, MD

Date: 6/1/2006

Outline

Meeting Objective

Problem Statement

Project Overview

- Objective
- Anticipated Benefits
- Technical Basis for Pursuing Project
- Scope
- Licensing Issues

NRC Feedback on Project

Meeting Objective

Preview Salem Service Water Simplification Project

Obtain NRC feedback

- Information necessary to support LCR
- LCR review schedule

Problem Statement

SW system design is complex

- Different flow rates for normal and LOCA conditions
- Multiple active components change state on accident signal
- Surveillance and maintenance requirements impact system availability

Repeated LCO entries

- Unplanned LCOs (23 since 1/1/05)
- Frequent entries for de-silting

Project Objective

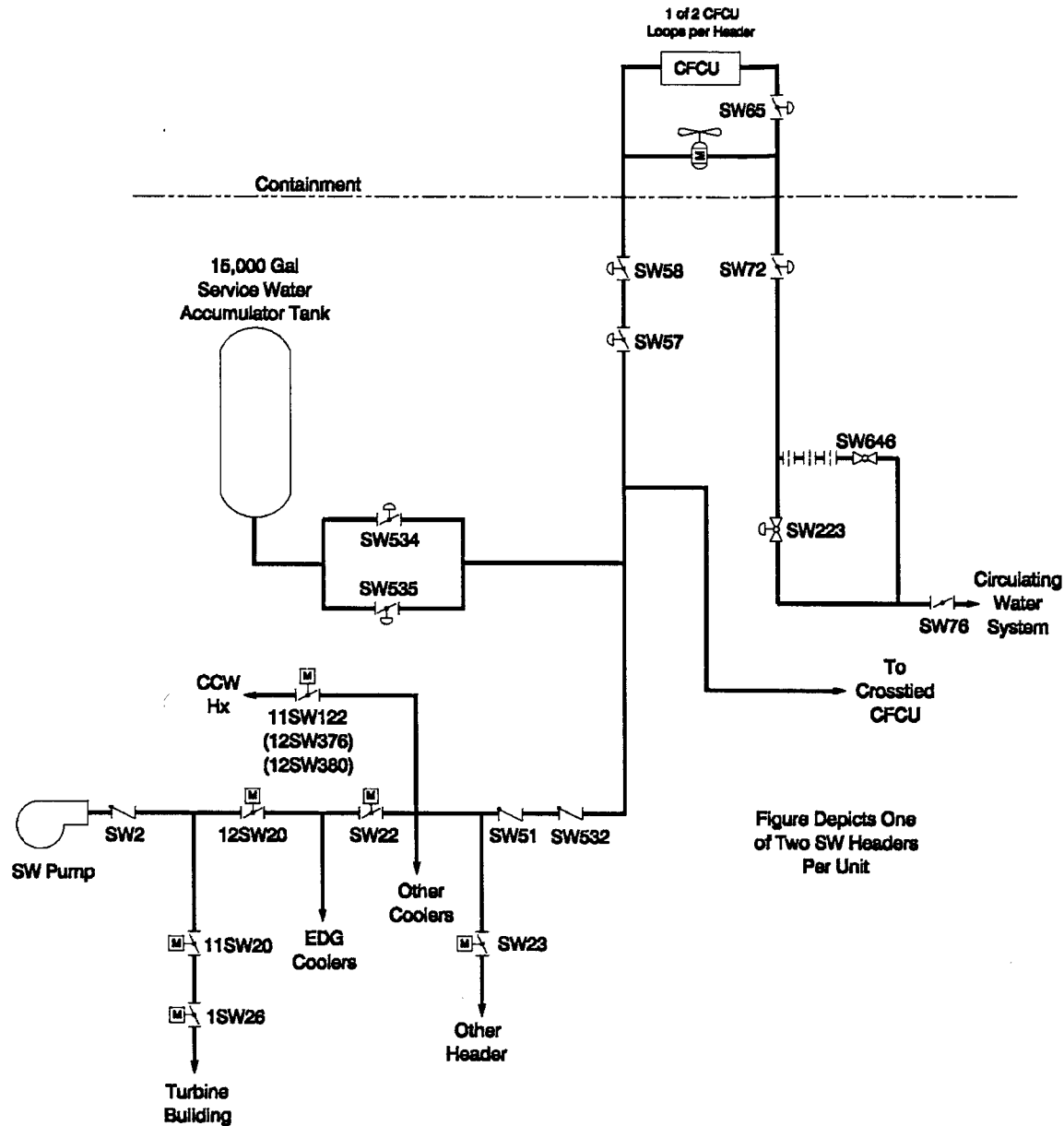
Objectives

- Improve safety and reliability by simplifying design
- Reduce number of components with active safety functions
- Reduce unplanned LCOs

Approach

- Adopt lower required CFCU flow rate for LOCA conditions
 - Containment re-analysis
- Implement fixed-resistance flow scheme
 - Restriction orifices (passive) in lieu of modulating flow controls
- Eliminate accumulator tanks
 - Transient hydraulic analyses and pipe support modifications

Existing System Design



Anticipated Benefits

Improved safety

- Fewer safety-related valves with active safety functions
 - Reduced number of potential failure modes
 - Improvement in LRF
- Reduced unplanned LCOs
 - Main flow path and flow control: 16 LCOs since 1/1/05
 - Tanks: 7 LCOs since 1/1/05

Recovery of system margin

Improved industrial safety

- Reduced activities in containment at power
 - Heat stress

Improved reliability and availability

- Simplified system
- Reduced surveillances
 - Reduction in number of valves requiring surveillance testing
 - Elimination of tanks

Technical Basis for Pursuing Project

Containment Re-analysis (WCAP 16503)

- Available margin allows CFCU heat removal rate to be reduced

Fixed-Resistance Flow Control (S-C-SW-MEE-1928)

- Fixed-resistance flow scheme using orifices is feasible
- Single flow rate of ~1500 gpm

Elimination of CFCU Accumulator Tanks (MPR-2878)

- NRC/Industry guidance for analytical approaches for GL 96-06 successfully applied at other sites
- Fixed-resistance scheme reduces severity of waterhammer for limiting case

Project Scope: Modifications

Valve modifications (5 each per unit)

- Eliminate SW57 valves
- Eliminate SW65 valves
- Change SW223 valves to open/shut with limit stop

Orifices

- 4 orifices per CFCU loop
- Bypass lines to allow high flow flush of CFCUs

Tank elimination (2 per unit)

- Cut and cap injection line
- Abandon tanks in place

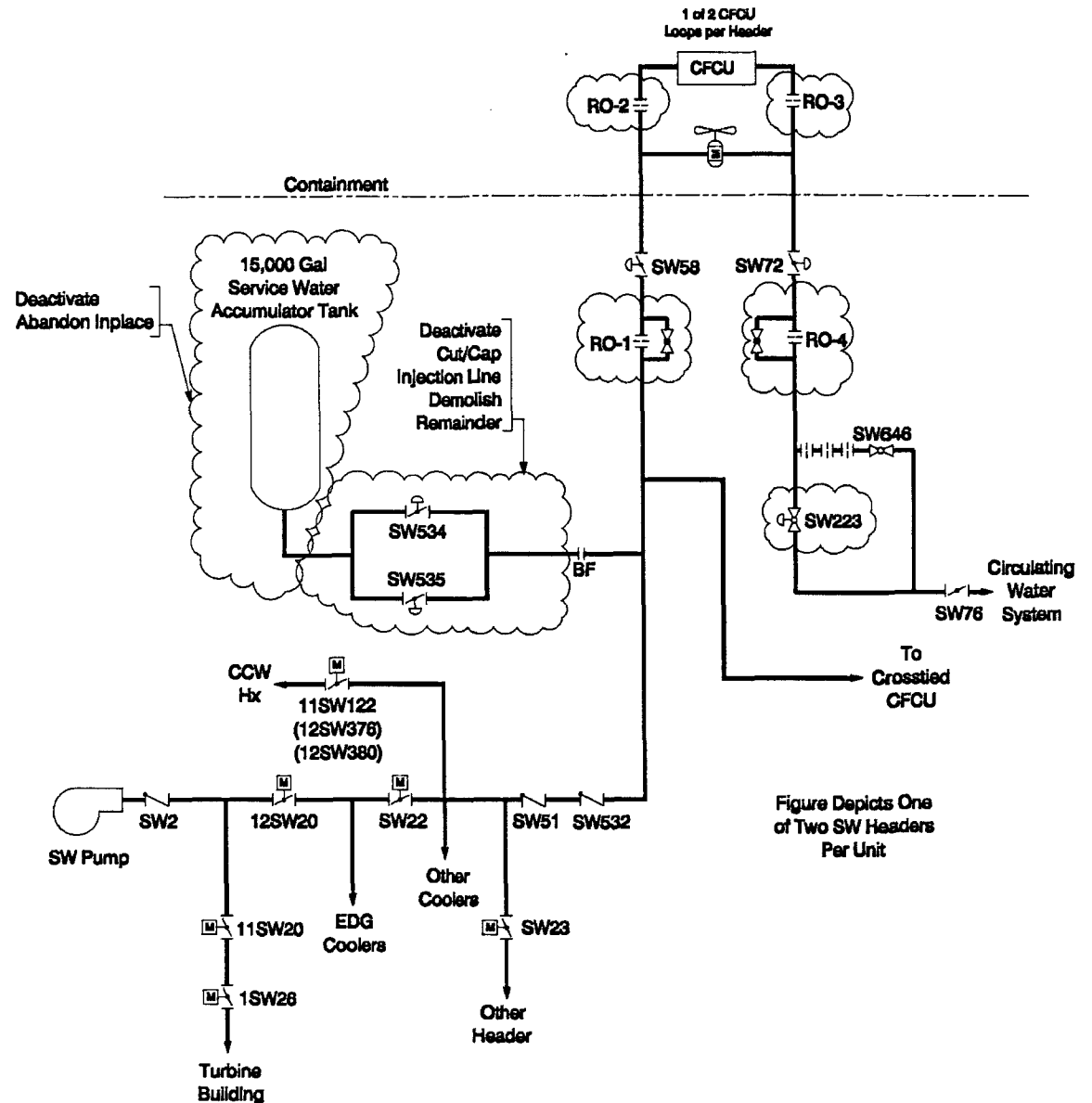


Figure Depicts One of Two SW Headers Per Unit

Licensing Issues

License Change needed to:

- Reduce CFCU accident flow rate
 - Changes Tech Spec limit
- Eliminate accumulator tanks
 - Eliminates Tech Spec criteria
 - Alters commitment that SW System remains water solid

Preliminary NRC feedback??