

ACCELERATOR SHUTDOWN

Plans for Industrial Cooling Water (ICW) System Flushing

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ICW System Overview

- *Water Source for Equipment Cooling*
- *Water Source for Fire Protection*
- *System Size Approximately 16.5 Miles*
- *In-Line Automatic Strainers Exist at
Switch Yard, Industrial Area, WH, New Muon,
Meson Cryo, FCC, CHL and Casey's Pond*
- *In-Line Manual Strainers Exist at IB4, WH
Duplicating, LINAC, Lab A, HIL, MDB, MP9
and MW9 Service Buildings*

FESS

Engineering, Operations and Site Services



Normal Flushing Process

- *Flushing Procedure Was Developed in Conjunction with Outside A/E in 1993*
- *Provides an Engineered Process Based on Pipe Size, Pipe Length and Achievable Flow Rates*
- *Additions to the System have been Incorporated into the Flushing Plan*
- *Flushing Always Begins at Casey's Pond*
- *Normal Flushing Involves 20 Individual Sections*

Communication Process

- *FESS Operations Issues Utility Work Notifications Whenever Work is Being Accomplished on Any Utility System*
- *Distribution to Over 150 Individuals Across the Laboratory*
- *Specific Attention is Given to On-Going Operations and Strainer Locations*
- *Building Managers are the Points of Contact for Difficulties Noted During the Flushing Process*

Purpose and Duration

- *The Purpose is to Clean as Much Debris from the System as Possible Prior to the Flushing for Zebra Mussel Treatment*
- *Flushing Has Been Accomplished on an Annual Basis Since 1995*
- *Duration is the Variable that Precludes Exact Scheduling of the Overall Process*
- *Pipe Sections Can Take 15 min or “As Long as it Takes” to Clear*

Precautions

- *History has Proven that the Flushing Process Identifies Weaknesses in the System*
- *FESS has Stockpiled Valves and Other Repair Materials*
- *We Also have T&M Contracts in Place to Respond to Needed Repair Efforts*
- *How many Valves/Pipes Fail During the Process Also Affects the Overall Time Needed*

Zebra Mussel Treatment

- *Our Strategy is to Do Normal Flushing First to Remove as Much Debris as Possible Now*
- *Treatment for Zebra Mussels is Non-Productive at Water Temps Below 65 F*
- *If Pond Temperatures Reach 65 F with Enough Time Left in the Shutdown Window We Will Proceed with Mussel Treatment and Another Flushing Cycle*
- *Flushing Sections will be Reduced in Size (60 Sections vs 20)*

Summary

- *FESS has a Proven Procedure in Place and Experience in its Execution*
- *We Believe this Strategy will Sustain System Operation Even if Only the Normal Flushing is Accomplished*
- *We are Prepared to Respond Quickly to Needed Repairs*
- *We will Alert Building Managers of All Extraordinary Work Required During the Flushing System*