Dominion

Millstone Unit 2
Unplanned Reactor Power Increase
Lessons Learned

US NRC Regulatory Information Conference

Rich MacManus
Director –Nuclear Safety & Licensing
March 15, 2012

Dominion

February 12, 2011 Event

During performance of Millstone Unit 2 turbine control valve testing with the unit at 88% power, an unplanned power increase of approximately 8 % reactor power occurred while placing the turbine first stage pressure feedback circuit in service. While reactor power was expected to remain at the nominal initial test value with minimal required operator intervention, Operator actions added positive reactivity during the transient.

2

Dominion

Lessons Learned

- *Operations Performance Monitoring Inadequate*: Development and use of a comprehensive Operations Performance Management program which included crew and individual performance monitoring and trending was lacking.
- *Operations Standards Not Being Met*: Control Room supervision failed to adequately carry out operational oversight functions, and the crew did not meet various standards.
- *Roles & Responsibilities of Crew*: The Control Room was not staffed as expected to ensure successful completion of the turbine valve testing.

3

Dominion

Lessons Learned

- *Weakness in Operator Fundamental Knowledge*: The turbine valve testing team did not fully understand how the turbine control system worked in the first stage pressure set mode.
- *Inadequate Procedural Guidance*: There was insufficient procedural guidance provided for resetting the Variable High Power Trip (VHPT) set point.
- *Inappropriate Reactivity Management*: The pre-job brief conducted on Thursday prior to the evolution and on the day of the event did not meet station standards.

4

Dominion

Lessons Learned

- *Just In Time Training (JITT) Not Fully Effective*: The JITT did not eliminate knowledge issues associated with first stage pressure input control and did not sufficiently reinforce crew teamwork, roles and responsibilities.
- *Simulator Modeling Issue*: Simulator modeling of the turbine valve testing was determined to be less sensitive than the plant.
- *Procedure Quality*: The turbine control valve test procedure needed improvement to properly prompt correct operator actions.

5