HOLTEC
PALISADES

Palisades MOV Program Plan

Introductions

Holtec/Palisades

- **Stephanie Liska, Manager, Programs & Analysis**
- **Mike Engel, Supervisor, Systems & Components**
- **Adam Ilkka, MOV Engineer**
- **Jeremy Quinn, AOV Engineer**
- **Roger Champion, Inservice Testing Engineer**
- **Ronald Penna, Senior Valve Project Manager**
- **Robert Dailey, AOV Programs Consultant**

Meeting Purpose and Goal

- **Purpose**
  - **Provide an overview of the restoration of the MOV Program at Holtec Palisades**
  - **Present Holtec Palisades' approach towards NRC GL 89-10, NRC GL 96-05, and ASME OM Code Appendix III in preparation of Palisades restart**
- **Goal**
  - **Obtain NRC feedback and insight on the following:**
    - **Proposed approach toward MOV Program restoration and implementation of ASME OM – 2020 Appendix III at Palisades**

Overview

- Palisades commenced commercial operation in 1971
- License renewal granted on January 1, 2007
- Due to market conditions, reactor shut down for retirement on May 20, 2022
- Holtec announced intention to return Palisades to commercial service early 2023
- Announced Holtec signed a power agreement with Wolverine Power Cooperative in September 2023
- Presented Palisades restart overview and regulatory path in February 2023
- Submitted request for exemption from 10 CFR 50.82 on September 28, 2023

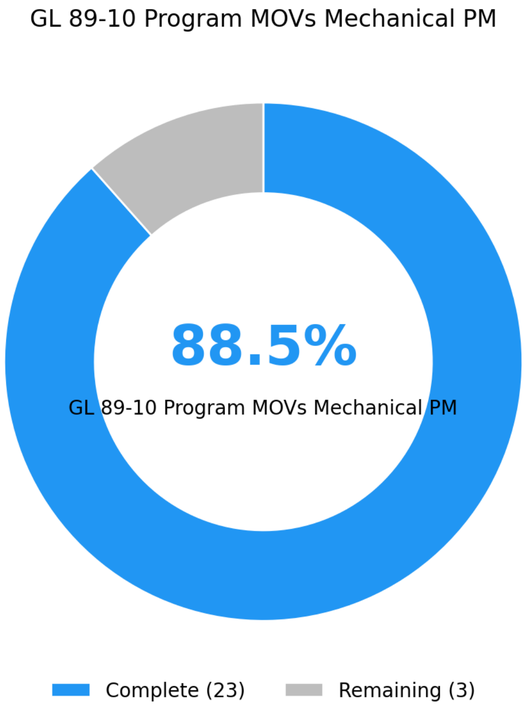
Background on MOV Program

– **Palisades has 26 MOVs in safety-related systems outlined in ENG-539, “Motor Operated Valve Program”, that are subject to the requirements of NRC Generic Letter 89-10.**

- **Engineering Safeguards (ESS)**
  - MO-3007 – HPSI to Reactor Coolant Loop 1A
  - MO-3009 - HPSI to Reactor Coolant Loop 1B
  - MO-3011 - HPSI to Reactor Coolant Loop 2A
  - MO-3013 – HPSI to Reactor Coolant Loop 2B
  - MO-3008 – LPSI to Reactor Coolant Loop 1A
  - MO-3010 – LPSI to Reactor Coolant Loop 1B
  - MO-3012 – LPSI to Reactor Coolant Loop 2A
  - MO-3014 – LPSI to Reactor Coolant Loop 2B
  - MO-3015 – Shutdown Cooling PCS Block
  - MO-3016 – Shutdown Cooling PCS Block
  - MO-3062 – Redundant HPSI to Reactor Coolant Loop 2B
  - MO-3064 – Redundant HPSI to Reactor Coolant Loop 2A
  - MO-3066 - Redundant HPSI to Reactor Coolant Loop 1B
  - MO-3068 - Redundant HPSI to Reactor Coolant Loop 1A
  - MO-3072 - HPSI Train 2/Charging X-Conn
  - MO-3080 – HPSI Hot Leg Injection Mode Select Valve
  - MO-3081 – HPSI Hot Leg Injection Mode Select Valve
  - MO-3082 – HPSI Hot Leg Injection Mode Select Valve
  - MO-3083 – HPSI Hot Leg Injection Pressure Letdown
  - MO-3189 – LPSI Pump P-67B Suction from SIRWT
  - MO-3190 – LPSI Pump P-67B Suction from PCS
  - MO-3198 – LPSI Pump P-67A Suction from SIRWT
  - MO-3199 – LPSI Pump P-67A Suction from PCS
- **Primary Coolant (PCS)**
  - MO-1042A – Power Relief Isolation Valve
  - MO-1043A – Power Relief Isolation Valve
- **Chemical Volume Control (CVCS)**
  - MO-2160 – Boric Acid Pump P-56A/B Feed Isolation

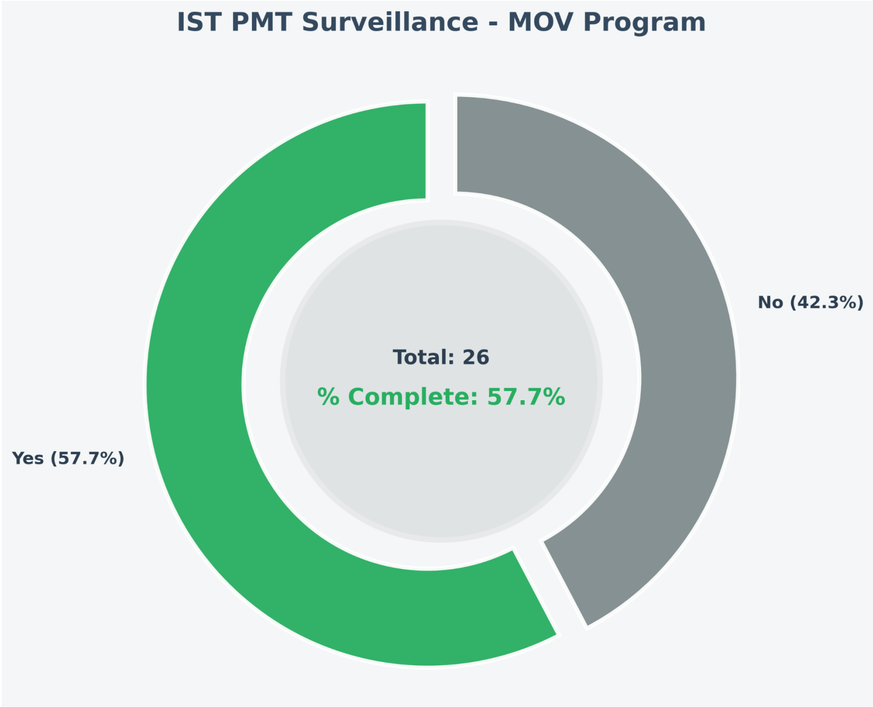
Restoration Plan for MOV Program

- **All Major PMs and Static Diagnostic Testing are in scope to be completed for Program MOVs.**
  - **Current statues of restart scope has 23 of 26 program MOVs showing complete for Major PM and Static Diagnostic Testing.**
- **3 remaining MOVs requiring Major PM and Static Diagnostic Testing include VOP-2160, VOP-3189, and VOP-3198.**
  - **VOP-2160: Per EC-63774, NFPA 805A, Modification to change Motor Pinion Gear, actuator worm shaft gear, and spring pack. Includes Static Diagnostic Testing.**
  - **VOP-3189 and VOP-3198: Major PM and Static Diagnostic Testing.**



Restoration Plan for MOV Program

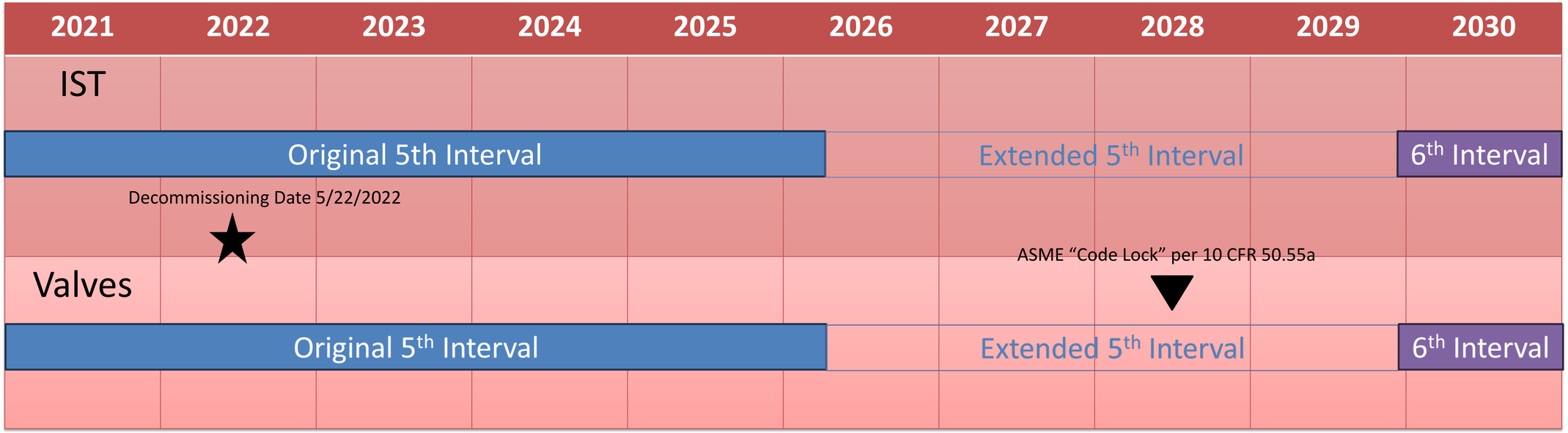
- **Surveillance Testing, per QO-5 “VALVE TEST PROCEDURE” and QO-6 “COLD SHUTDOWN VALVE TEST PROCEDURE”, have been completed for 15 of 26 Program MOVs.**
  - **Remaining Surveillance Testing in scope to be completed as plant conditions change.**



Corrective Actions for MOV Program

- **Issues identified during Major PMs and Static Diagnostic Testing and documented per the Corrective Action process:**
  - **Minor Stem Nut Wear identified on VOP-3011 and VOP-3013. (PAL-02980)**
    - Action Taken: Stem Nut Wear on VOP-3011 and VOP-3013 evaluated and determined to be within procedural requirement, per ENG-109 “MOV Test Data Review”, for replacement within next 2 refueling cycles. Work orders planned to replace stem nuts in next refueling outage. (00586830 & 00586831)
  - **MOV Testing indicated valve repack required for MO-3190. (CR 25003028)**
    - Action Taken: Work task updated to repack valve at time of identification.
  - **MOV Testing indicated valve repack and actuator overhaul for MO-3015. (PAL-07953)**
    - Action Taken: Work Order planned to Repack Valve and Rebuild Actuator per standard work management process. (51599299)
  - **MOV Testing identified Trend Data exceeded procedure criteria for CDOT for MO-3008, MO-3010, MO-3012, and MO-3014. (CR 25002907)**
    - Action Taken: Increased CDOTs identified as a known condition per ENG-539 MOV Program. Increased CDOTs attributed to design changes to breaker design. PMs for breakers are in scope to be completed.

MOV Program Restoration Timeline



- **Interval extensions allowed by ASME OM, ISTA-3120(e) from OM for plants "out of service continuously for 6 months or more"**
- **Start of new interval (6th IST) to coincide with the end of the extended intervals**
  - **New CORs will be selected within 18 months of the interval start dates to comply with 10 CFR 50.55a(f)(4)(ii) and (g)(4)(ii). Marked as "Code Lock" on the timeline**
  - **MOV Program to implement ASME OM-2020 Appendix III within 18 months of the interval start date.**

Palisades Implementation of ASME OM-2020 Appendix III

- Summary of updates from ASME OM Code 2012 Appendix III to ASME OM Code 2020 Appendix III:

Feature	OM Code 2012 Appendix III	OM Code 2020 Appendix III
Valve position verification	No local check required	Required local check + supplements
Code Case OMN-28 integration	Not applicable	Permitted for non-stem-disk separation valves
Alignment with ISTC-3700	Partial reference	Full Alignment
Scope	Light-water reactors	LWRs and SMRs with expanded applicability

- Palisades MOV and IST Program will require updates to ensure local position verification of all valves with remote position indication per requirements in Appendix III.
- Palisades to evaluate MOV program population for Code Case OMN-28 for alternative position verification for valves not susceptible to stem-disk separation.

Thank You

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