Brad Boyer

Prairie Island Nuclear Plant
Radiation Protection Manager

Prairie Island Nuclear Plant

Steam Generator Replacement Project

- 2-Piece Replacement
- 2 Loop Westinghouse Design
- Unit-2 Commercial Operation in 12/74
- Unit 1 Replaced SGs in 2004

Other Major Projects

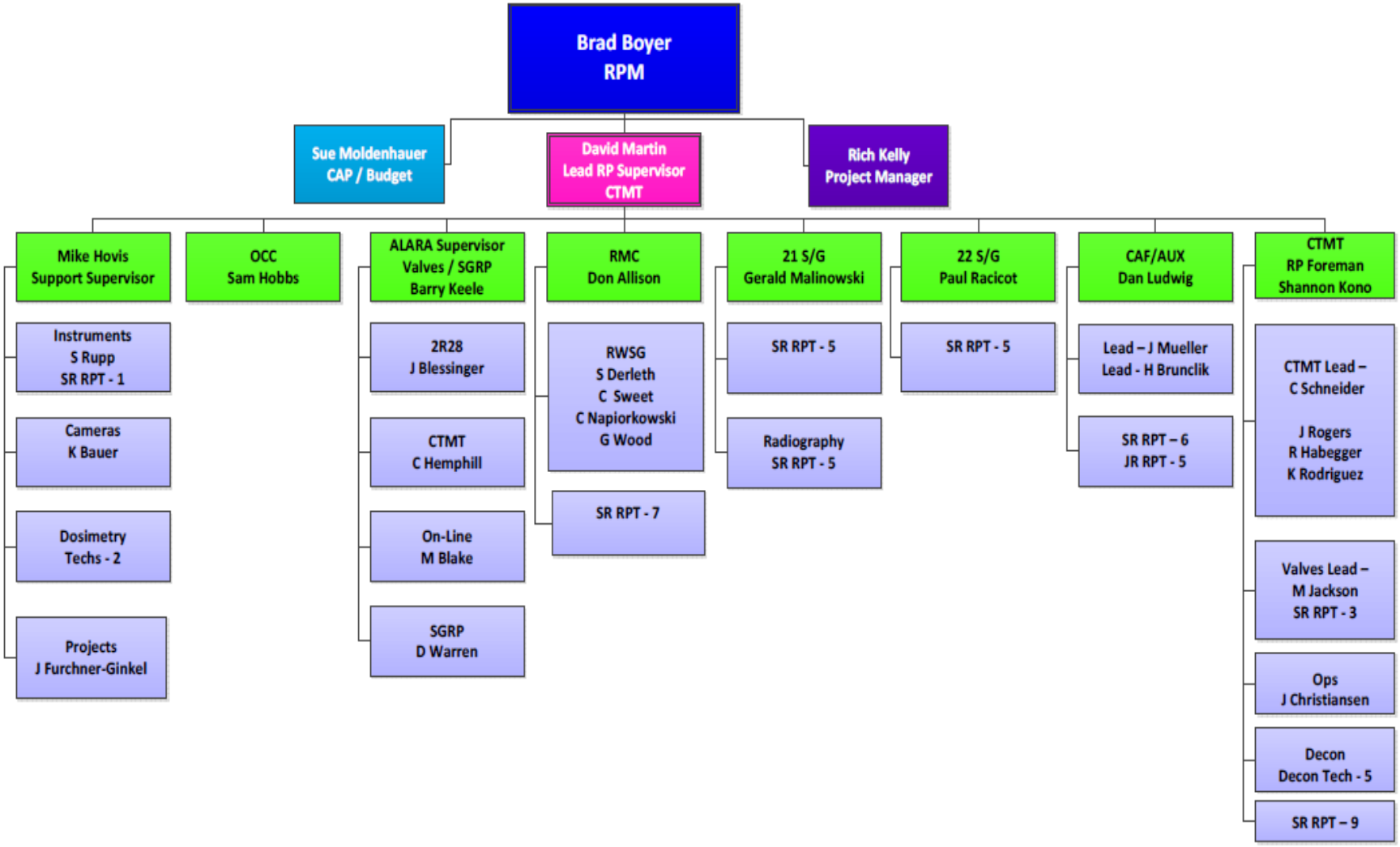
- Replace RCP 21 Motor
- RCP Seal Replacement Modifications
- Containment Valve Maintenance
- Baffle Bolt Inspections
- Replace EQ Terminations
- Transfer / Refuel Canal Repairs

Arrival of New Components

Radiation Protection Organization

- 25 Prairie Island RP Technicians
- 110 Bartlett Employees
  - 85 – Sr. and Jr. RP Technicians
  - 5 - RP Supervisors
  - 3 – ALARA Specials
  - 10 - Decon Technicians
  - 7 - Instruments, Dosimetry, Radwaste Shipper
- 83,000 Person-Hours and 0 OSHA / First Aids

RP Organization Chart



RP Plans

- Radioactive Material Handling
- RP Audio / Video / Remote Monitoring
- RP Instruments
- RP Radiography
- RCS Cutting and Laser Metrology of Pipe Ends
- OSG Removal and Transport
- Pipe End Decon and Internal Shielding
- RCS Machining and Welding
- FOSAR and RSG Bowl Closeout

RP Instrumentation and Equipment

- 3 Tool Monitors
- 6 Portal Monitors
- 3 Personnel Contamination Monitors
- 2 Proteans
- 25 Ion Chambers
- 25 Friskers
- 850 Electronic Dosimeters
- 5 HEPA Ventilation Units

ALARA

- Benchmarked Waterford 3 & Diablo Canyon SGRP
- Secondary Side Water Level Maximized
- Covered Primary Tubes During Welding Shield Plate Cover
- 19 Dedicated SGRP Cameras
- 36 Dedicated Refuel / RP Cameras

ALARA

- 33,000 Pounds of SGRP Lead Blankets
- Additional Remote Monitoring Equipment
- Large CCTV Monitors in CAF, OCC and SGRP Buildings
- Shutdown Chemistry Clean-Up Until 0.05 µCi/ml Co-58
- Visual Survey Data System (VSDS)

Mock-Up Activities

- RCS Cutting, Machining & Welding
- Pipe End Decon
- Install/Remove Temporary Shielding
- Install/Remove Tripod & Half-Moon Blankets
- Girth Weld Radiography

Contamination Control

- Prairie Island Posts CA at 100 dpm/100cm^2
- Highest Contamination on Initial Surveys
  - Inside Vaults: 3,000 dpm/100cm^2
  - Outside Vaults: 3,600 dpm/100cm^2
- Extensive Use of Rhino Rug and Oil Cloth
- Knee Pads Required

Contamination Control

- Scrubs & Protective Clothing Benchmarking
- Reactor Cavity Deck & Inside Hatch Transfer System Maintained “No Loose Surface Contamination Area”
- Total of 27 PCE’s. Goal was 35
  - 12 SGRP
  - 15 Refuel
- 100,352 RCA Entries, 0.03% PCE per RCA Entry

Radiation Exposure (Rem)

- SGRP Window: 21 Days Behind Schedule
- 2R28: 09/21/13 – 01/03/14
- SGRP Dose: 94.495
- Refuel Dose: 41.709
- 2R28 Total: 136.204
- Goal: 140.000

Highest Dose Contributors (Rem)

- RCS & SG Supports: 33.238
- Scaffold: 10.114
- Secondary Side Vessel: 4.346
- Secondary Side Piping: 4.168
- Prepare OSG for Transport: 3.860
- Labor / Decon: 7.299
- RCP Seal Replacement Modifications: 6.194

2-Piece SGRPs: Rem / SG

- DC Cook 1 – 33 (2000)
- Prairie Island 1 – 47 (2004)
- North Anna 2 – 47 (1995)
- Prairie Island 2 – 47 (2013)
- Kewaunee – 59 (2001)
- North Anna 1 – 80 (1993)
- Point Beach 2 – 94 (1996)

Demobilization

- Implemented the Radioactive Material Handling Plan
- Contract with Off-Site Vendor for Decontamination Services
- New Steam Generator Building Used for Direct Frisk of Large Equipment & Decon / Repackage Scaffolding
- 60 Sealands Shipped for Processing / Disposal
- 20 Containers of RAM Equipment
- Shipped 2 Steam Domes by Truck and 2 Lower Assemblies by Rail

Steam Dome

Steam Dome Ready for Transport

Lower Assembly

Lower Assembly on Rail Car / Transporter

Lower Assemblies on Rail Car

Questions ?

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