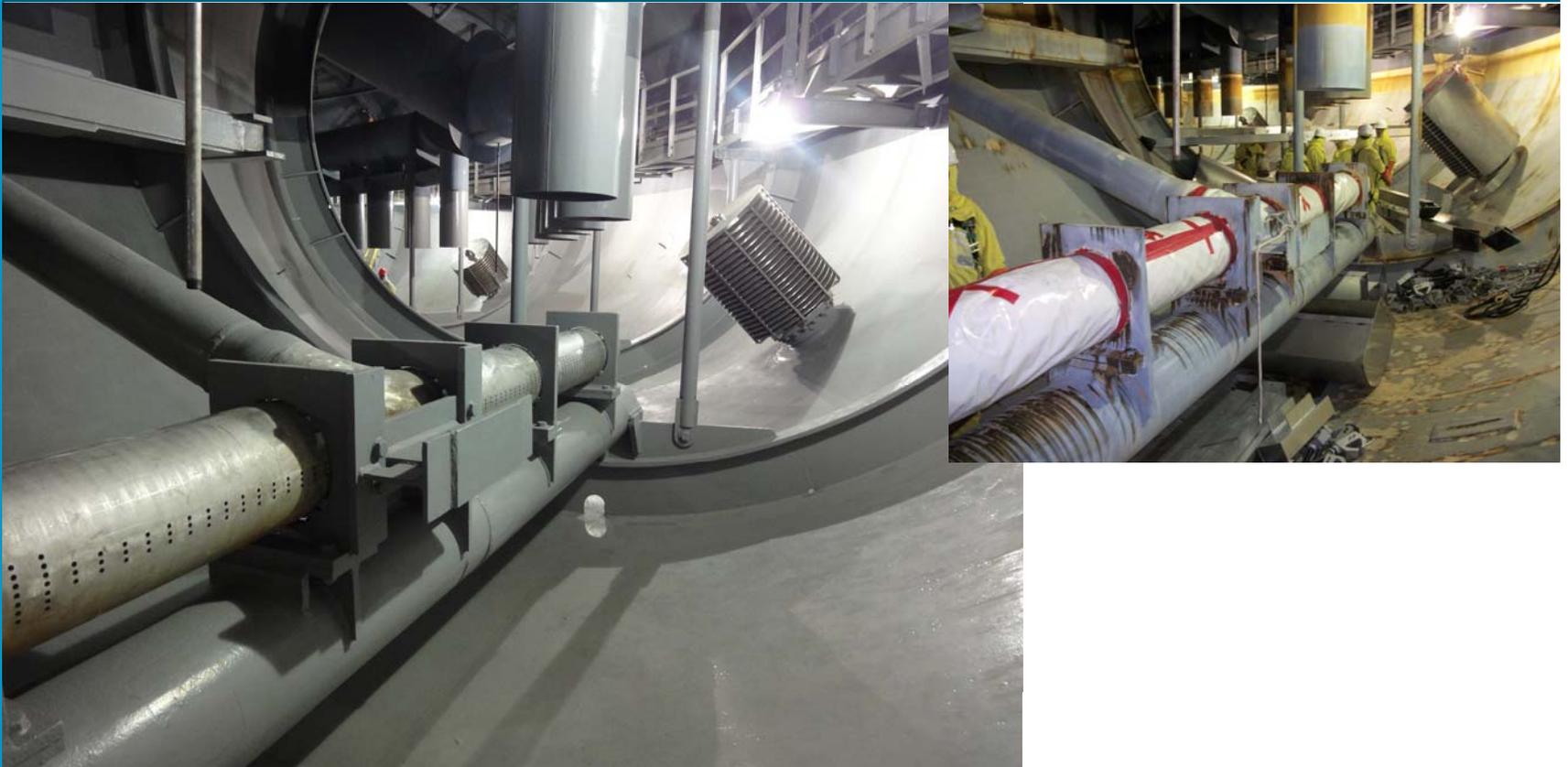


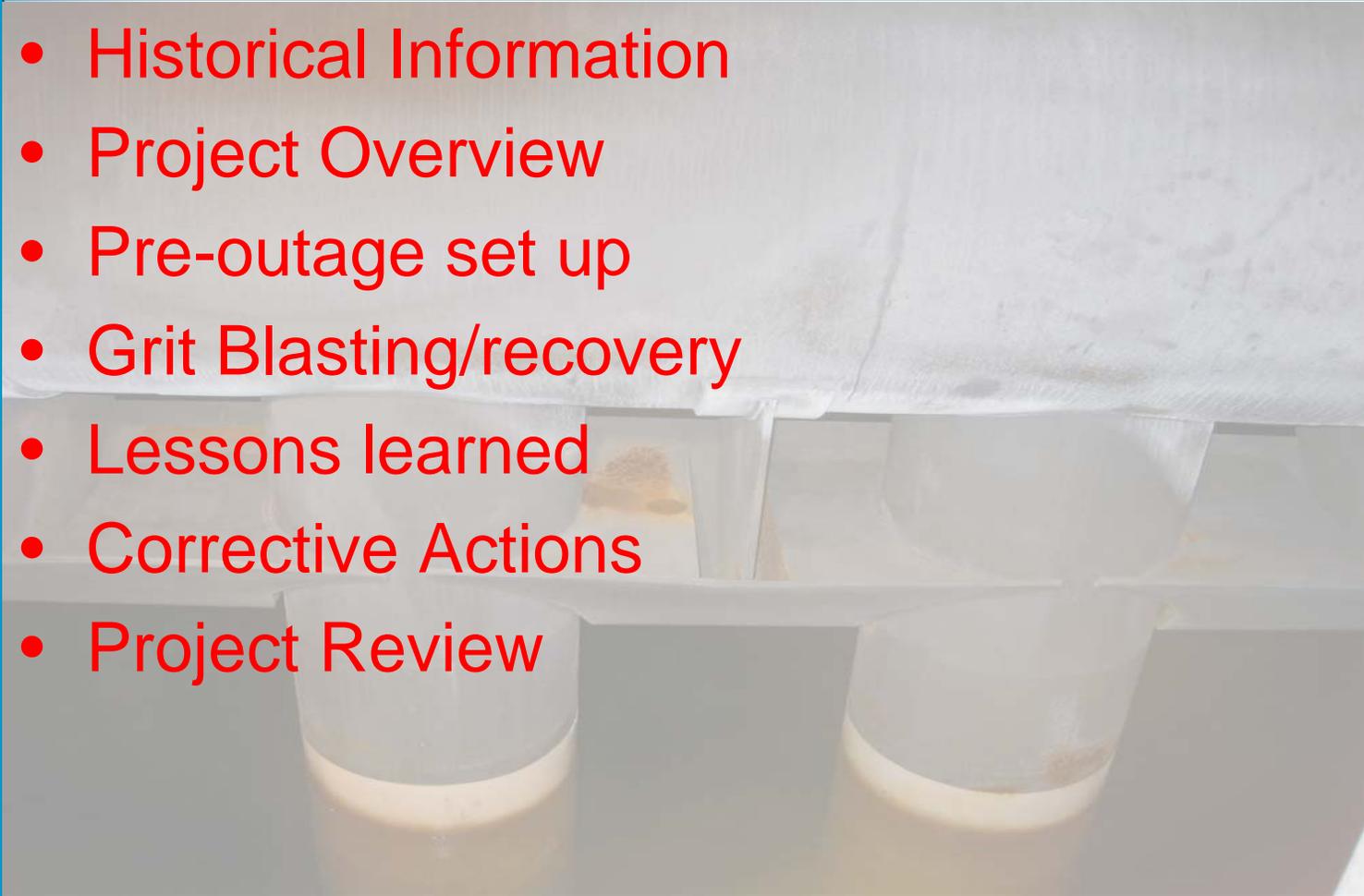
DAEC Torus Recoat Project-2012



Presented by: Robert L. Porter,
Radiation Protection Manager

DAEC Torus Recoat Project-2012

- Historical Information
- Project Overview
- Pre-outage set up
- Grit Blasting/recovery
- Lessons learned
- Corrective Actions
- Project Review



DAEC Torus Recoat Project-2012

Historical Information

Previous Recoat in 1985 (88 days)

138.6 Person-Rem

33 Percons

7 First aides from thinner (Toluene/MEK-showers & O2)

36 RWPs

- Hydrolazing-decon/desludge (7 days 17 hrs, 16.5 Rem)
- Weld Repairs (31 days, 31.2 Rem)
- Grit Blasting, 30 tons of grit (21 days, 87.5 Rem)
- Vac Breaker repair (260 man-hrs, 2.4 Rem)
- Recoat (15 days, 1.0 Rem)

T-Quenchers 50-200 mRem/hr (unshielded)

7.6 e-7 uCi/cc (maximum concentration air sample)



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Project Overview

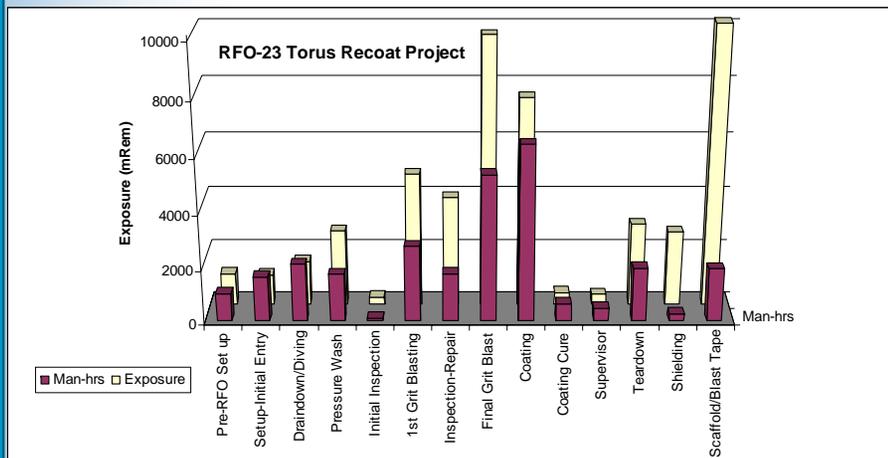
The Torus Recoat Project will remove the existing coating on the interior of the Torus walls.

All internal components that are located below an elevation three feet above the normal water line will be blasted and re-coated (with the exception of the Tee-Quenchers).

Duration- 36.5 days

Dose Estimate- 49.5 P-Rem

PCE Goal- <5



Job In-Progress reviews
at 25%, 50% and 75%

DAEC Torus Recoat Project-2012

Project Overview

Original Dose Estimate: 49.5 Person-Rem

Revised Estimate: 29.0 Person-Rem

- T-Quencher decon effort (Divers)

Index rates used for 2012, based on historical information for the project were 1.8 mRem/hr.

Due to a successful decontamination effort of the T-Quenchers by the Dive team the overall index rate was reduced to 0.9 mRem/hr.



Area	Exposure Rates In mRem/hr	Actual	Contamination Dpm/100cm ²	Actual	*Airborne Activity DAC
RB1, 757'	<0.2-0.2	No Delta	<1k	No Delta	< 0.3
LLRW	<0.2-0.2	No Delta	<1k	No Delta	< 0.3
Top of Torus	1-4	No Delta	<1k-5k	No Delta	< 0.3-2
Torus Catwalk	1-18	1-25	<1k-5k	No Delta	< 0.3-10
Bottom of Torus	2-200	1-4	1k-50k	No Delta	< 0.3-10

DAEC Torus Recoat Project-2012

Pre-outage set up

Radwaste storage vault modified to allow water processing (~200,000 gallons)

Extensive Benchmarking at Peach Bottom

Phase Specific ALARA Plans Developed

COMMUNICATIONS	PROTECTIVE CLOTHING
CONTAMINATION CONTROL	RADWASTE
DECON/PRESSURE WASH	RESPIRATORS
DIVING	RADIOGRAPHY
DOSE CONTROL	SET UP/DEMOB
DOSIMETRY	SHIELDING
DRAINING	STAFFING
FLOOR PLAN	TRAINING
GRIT BLASTING	VENTILATION
MOCK UP	DEMOB



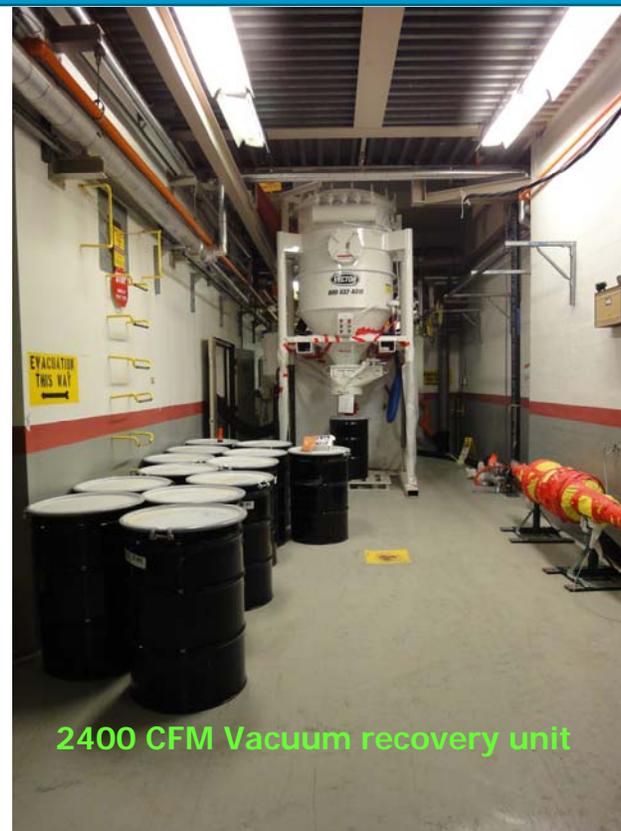
3 RWP's Developed (13 Tasks)

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Grit Blasting/recovery

Grit Blasting

- Broken hose connection (outside CA)
- Blast guns issues (dead man solenoid)
- Carbon fittings on Vac line wore out quickly
- Blown fuses on blast pots
- Poor Torus lighting
- Need to stagger crews



2400 CFM Vacuum recovery unit



60 Tons of Grit used
(Vault and Torus)

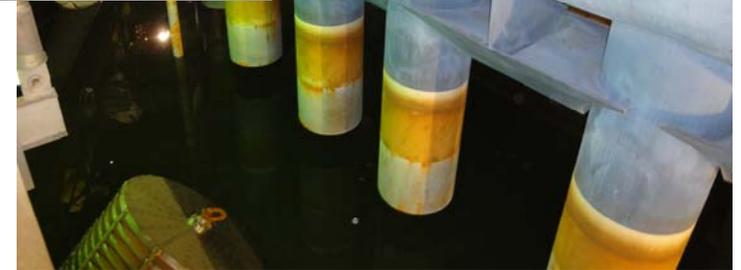
~700 gallon water intrusion
through T-Quenchers
(unidentified source)

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HP Lessons Learned

(+)

Diver hydrolase T-Quenchers
Supplemental HP Support
PAPR's
Mock up areas (building/Torus section)
UltraGel II (contamination fixative)



(-)

Decon effort
– All areas not accessible (backside of ring header-Inside Downcomers)
Communications (radios, turnover & PJB)
Craft radworker experience
Craft training/qualification
Crud Burst
Re-work-202 hrs (coating thickness & water intrusion)



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Corrective Actions

119 Torus Recoat Project Action Requests
135 Lessons Learned-Post Project Critique



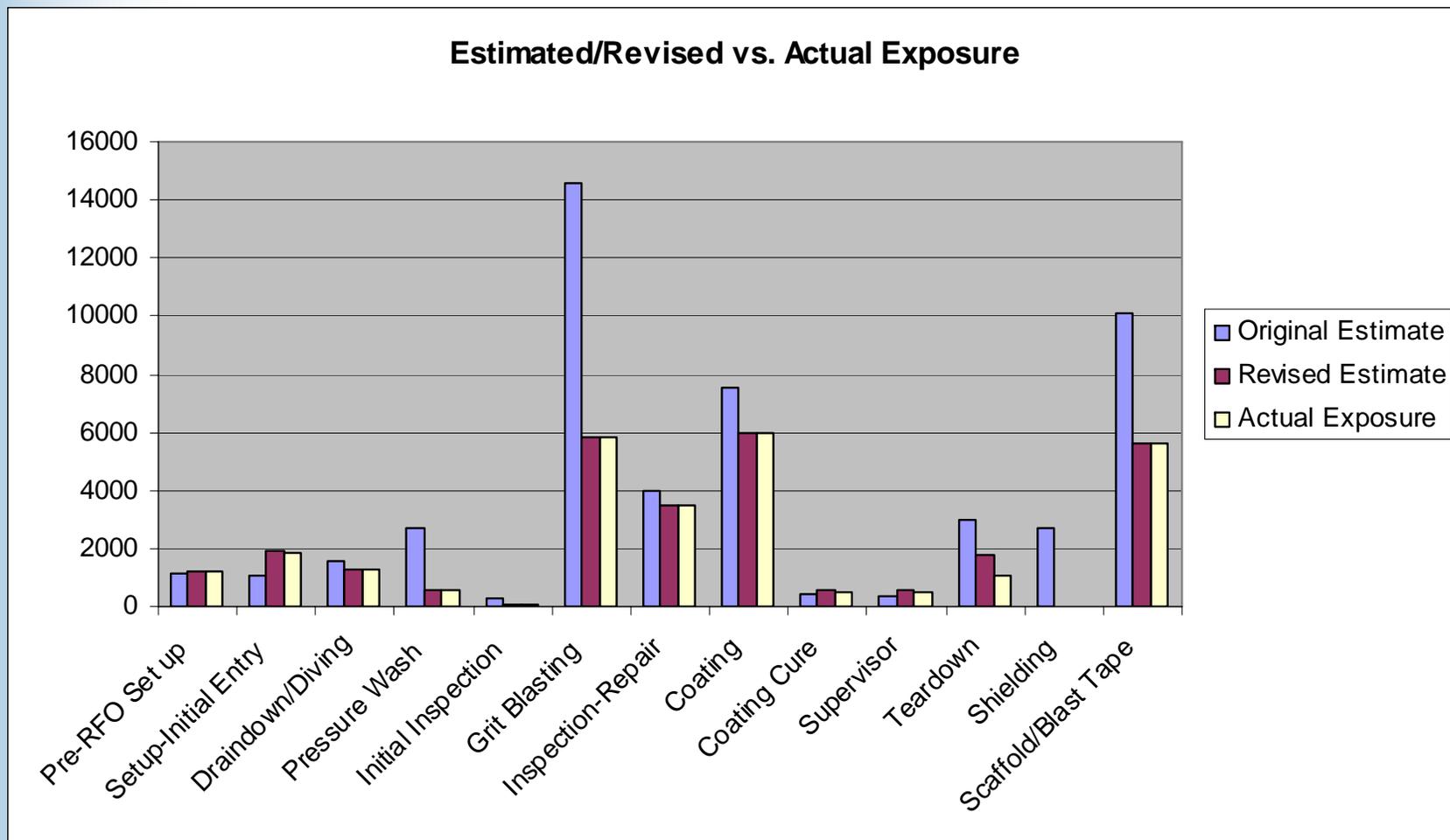
Apparent Cause Evaluations

(10) supplemental workers alarmed the monitors at Access Control while attempting to exit the RCA. All (10) workers were working in the Torus proper on the Torus Recoat project. Six of the ten workers had >100ncpm above background contamination on their clothing and/or facial area which resulted in six PCE's.

All formal assessments resulted in CEDE determinations below 10 millirem. Therefore, no internal dose was assigned to any of the workers

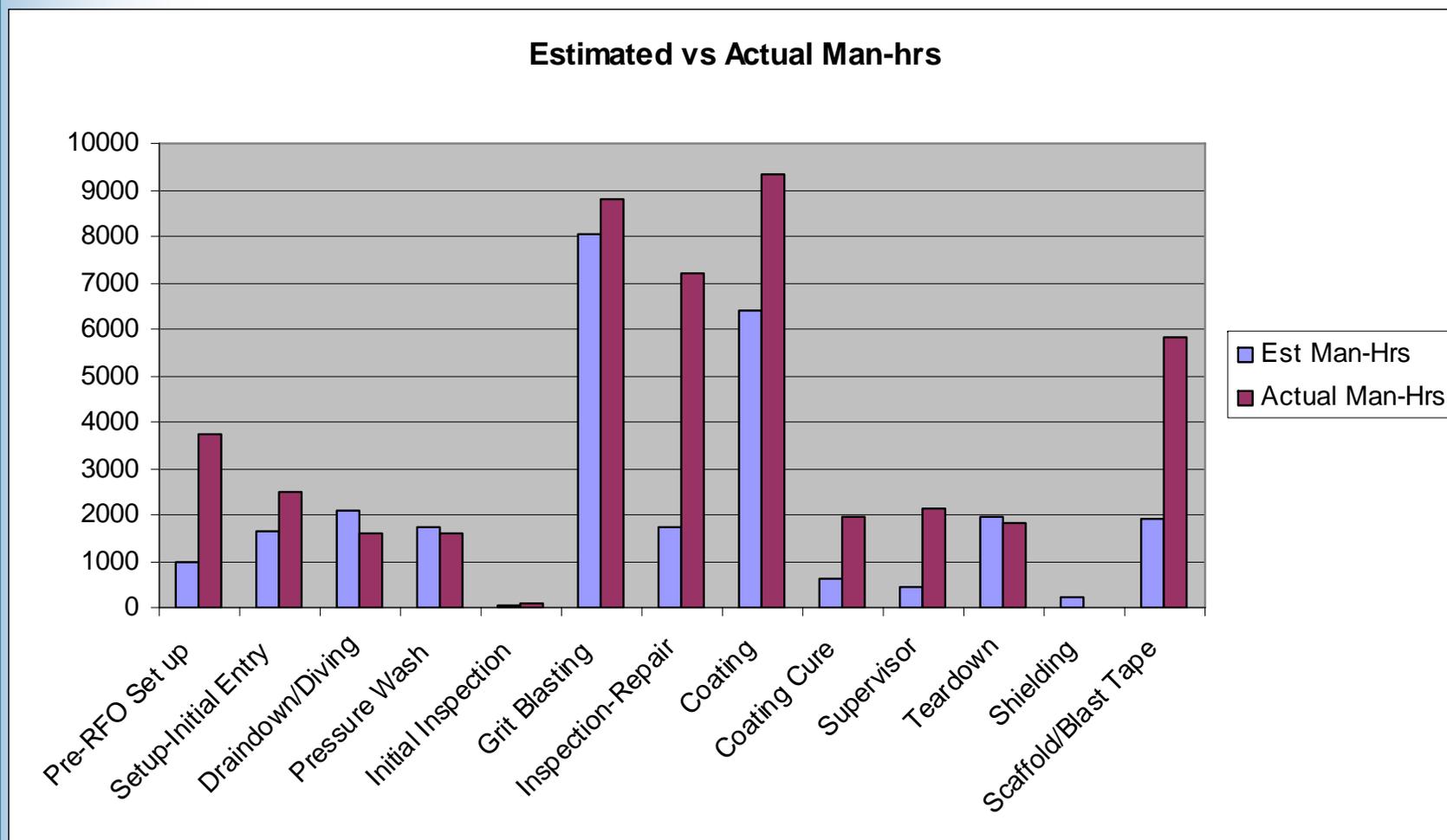
A significant amount of the initial torus coating did not meet the required dry film thickness. As a result of these inspection failures, significant rework had to be performed on outage critical path to recoat the torus. 45 hours

DAEC Torus Recoat Project-2012



Peach Bottom & Cooper have visited DAEC for Benchmark

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DAEC Torus Recoat Project-2012

Project Review	Actual	Estimate/goal
Exposure	28.1 P-Rem	29.0
Dive Exposure	2.7 P-Rem	3.2
PCE's	6 (Single Shift, unsurveyed area)	5
Industrial Safety	1 first aid (Blast nozzle sprayed forearm)	0
Duration	41.9 days	36.5 days