

# DOE-Richland Operations Office Maintenance Policy



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August 9, 2012

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# DOE- RL Maintenance Policy

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- **Events at Fukushima challenged the Department of Energy-Richland Operations Office (DOE-RL) and CH2M HILL Plateau Remediation Company (PRC) to review our nuclear operations**
- **Defense Nuclear Facilities Safety Board (DNFSB) assessment of Waste Encapsulation and Storage Facility (WESF) identified several weaknesses regarding maintenance of facility systems**
- **October 17: PRC with oversight from DOE-RL conducted a management assessment at WESF and Canister Storage Building (CSB) focusing on nuclear operations and in-progress corrective actions from the DNFSB review**
- **DOE-RL found the PRC assessment to be very effective in the way it was conducted and validated the DNFSB findings**

# DOE- RL Maintenance Policy

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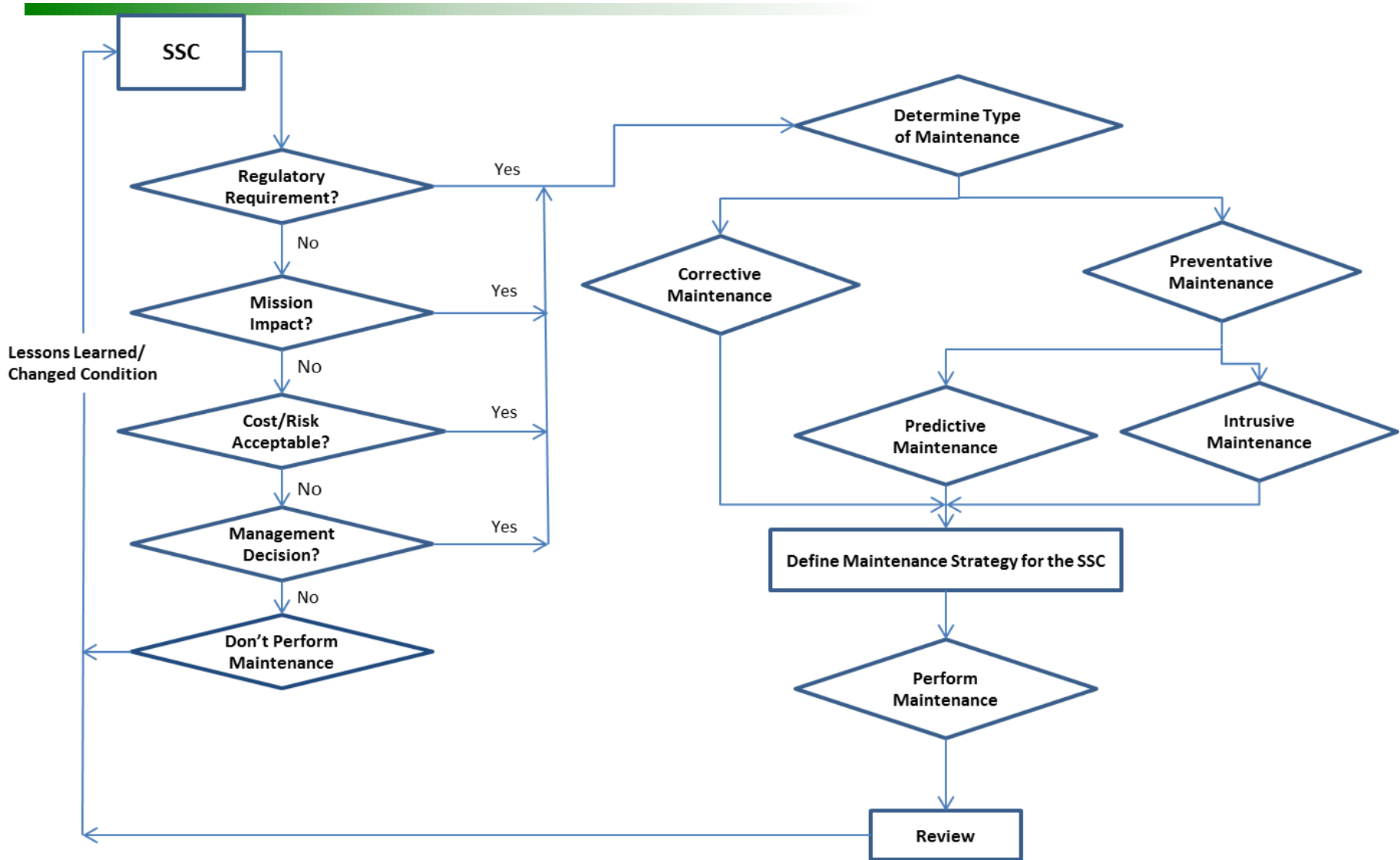
- **November 21: WESF corrective action plan (CAP) was developed and submitted to DOE-RL to address issues identified at WESF**
- **DOE-RL is closely monitoring the resulting CAP and has performed an effectiveness review of the actions completed to-date**
- **DOE-RL is performing independent oversight (shadowing) of the PRC's new Nuclear Safety Performance Evaluation Board (NSPEB) during CY12 using combined Fac Rep, Safety System Oversight, and Nuclear Safety Subject Matter Expert teams**
- **Shadowing NSPEB evaluations of WESF and Waste and Fuels have been conducted to-date; Plutonium Finishing Plant (PFP) evaluation is scheduled to begin week of Aug 27**

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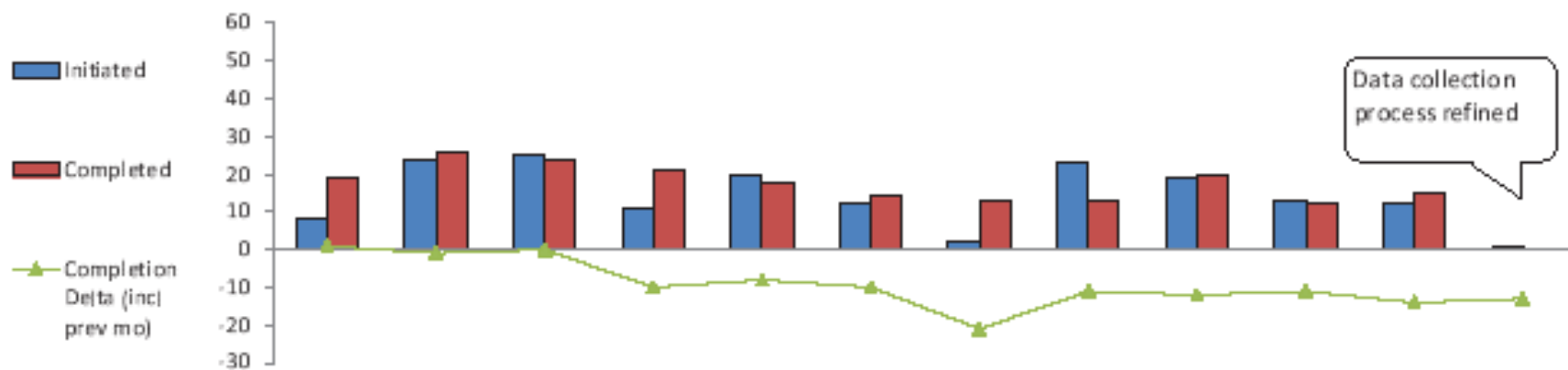
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- **DOE-RL, PRC, Washington Closure Hanford and Mission Support Alliance (MSA) developed a maintenance graded-approach for all facilities, including those that are undergoing life-cycle changes, such as transition to D&D, and cold and dark**
- **PRC and MSA are required to implement this new graded-approach process through a Supplemental Contract Requirements Document (SCRD)**
- **The SCRD provides a consistent logic that ensures the nuclear systems and those important to accomplish the mission will receive appropriate maintenance**
- **The SCRD requires an annual response from the contractors to DOE-RL on their application of this graded-approach**
- **PFP's maintenance program has been enhanced to extend the service life of it's confinement ventilation system exhaust fans by performing vibration monitoring of exhaust fans/motors.**

# Graded Approach to Maintenance



## Initiated vs. Completed Corrective Maintenance (Safety Related Equipment) (1 month lag)



	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12
Initiated	8	24	25	11	20	12	2	23	19	13	12	1
Completed	19	26	24	21	18	14	13	13	20	12	15	0
Completion Delta (incl prev mo)	1	-1	0	-10	-8	-10	-21	-11	-12	-11	-14	-13

### Definition

The repair, restoration, or replacement of failed or malfunctioning equipment, system, or facilities to restore the intended function or design condition. Safety Related Corrective Maintenance packages, initiated and completed.

Completion Delta calculation (previous month's delta + Current Initiated - Completed)

This PI provides information on a 1 month lag due to gathering of project data and work package closeout requirements.

SC = Safety Class

SS = Safety Significant

DID = Defense in Depth

TSR = Technical Safety Requirement

VSS = Vital Safety System

### Analysis/Action

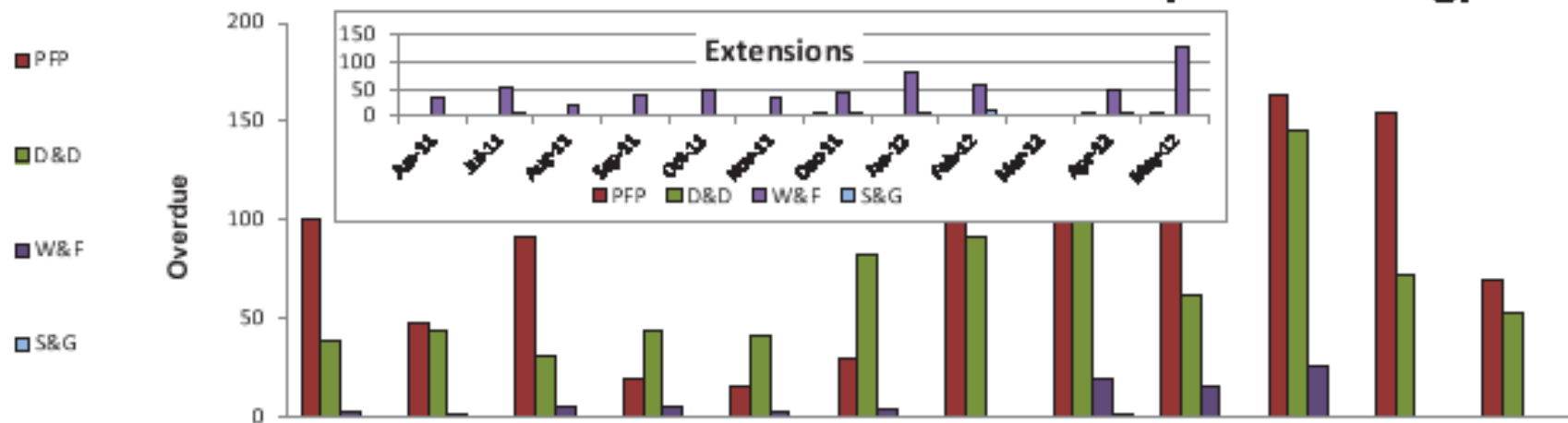
**Analysis:** The JCS database Safety Classification continues to be improved regarding identification of Safety Related Components.

**Note:** The data collection process was refined in June 2012 to more accurately identify corrective maintenance activities.

**Action:** JCS database updates are in progress to better reflect Safety Related Work Activities for improved reports. ECD 7/31/12. Continue focus to stay ahead of corrective maintenance.

Goal	-20	Based on monthly gain on completion delta
Blue	-20	
Green	-19 - 0	
Yellow	0 - 19	
Red	> 20	

# Preventive Maintenance Overdue and Extended (1 Month Lag)



Data	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12
PFP Overdue	100	48	91	20	15	30	194	188	120	163	155	70
PFP Extended	0	0	0	0	0	0	4	0	2	2	9	9
D&D Overdue	39	44	31	44	41	83	91	185	62	145	72	53
D&D Extended	0	0	0	0	0	0	0	0	0	0	0	0
W&F Overdue	3	1	5	5	3	4	0	19	16	28	0	0
W&F Extended	36	55	19	38	47	33	44	80	60	0	51	127
S&G Overdue	0	0	0	0	0	0	0	1	0	0	0	0
S&G Extended	2	4	0	2	2	2	4	6	11	0	4	2
<b>Total Overdue</b>	<b>142</b>	<b>93</b>	<b>127</b>	<b>69</b>	<b>59</b>	<b>117</b>	<b>285</b>	<b>393</b>	<b>198</b>	<b>334</b>	<b>227</b>	<b>123</b>

## Definition

Preventive Maintenance Overdue and Extended: Overdue Preventive Maintenance (PM) items are those that are not completed by the due date that have not been extended through technical justification. This includes both overdue PMs remaining from previous months, and from the current month.

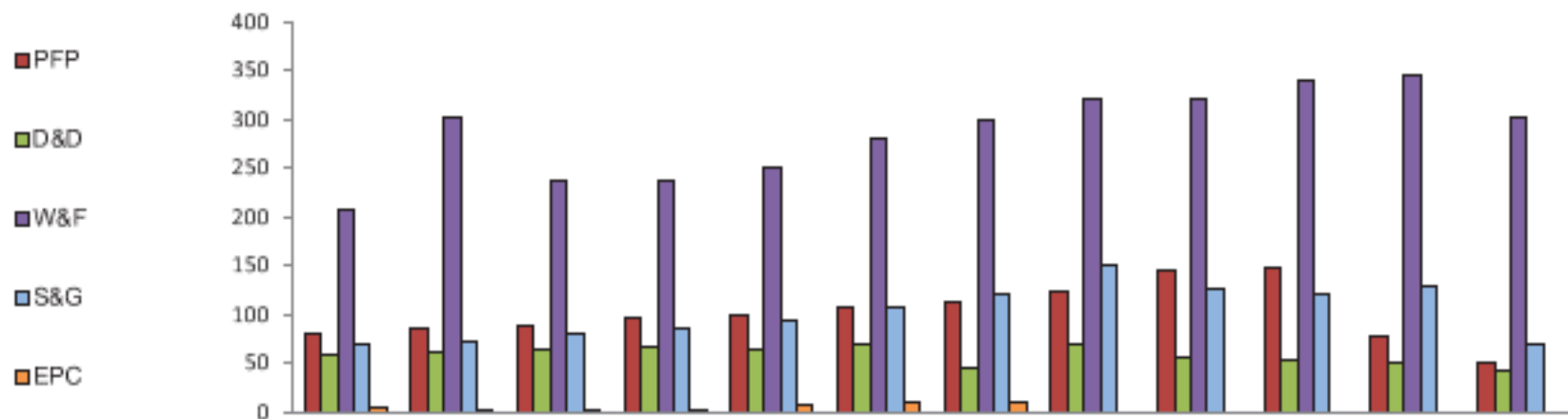
This PI provides information on a 1 month lag due to gathering of project data and work package closeout requirements.

## Analysis / Action

**Analysis:** D&D's Overdue number (25) was reported in error for April and has been corrected. PFP made significant progress in reduction and elimination of Overdue PMs. S&G continued to maintain no overdues. To avoid going overdue, PMs should be worked, extended if basis is technically justified, or equipment removed from service.

**Action:** Continue to evaluate the need to perform past due PMs, extend if warranted, remove equipment from service, or cancel PM.

# Corrective Maintenance Backlog (1 Month Lag)



Data	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12
PFP	81	85	89	96	100	108	112	124	145	149	77	51
D&D	60	63	64	66	65	69	46	70	56	54	52	44
W&F	208	302	238	236	251	280	299	320	320	339	344	301
S&G	69	73	80	85	94	108	122	152	126	121	130	71
EPC	5	4	4	4	9	11	10	0	0	1	0	1
<b>Total CM Backlog</b>	<b>423</b>	<b>527</b>	<b>475</b>	<b>487</b>	<b>519</b>	<b>576</b>	<b>589</b>	<b>666</b>	<b>647</b>	<b>664</b>	<b>603</b>	<b>468</b>

Definition	Analysis / Action												
<p>Corrective Maintenance (CM) Backlog: The repair, restoration, or replacement of failed or malfunctioning equipment, system, or facilities to restore the intended function or design condition. The Corrective Maintenance (CM) Backlog includes all CM work documents. Work orders with a work status of Ready for Planning, In Planning, Ready to Work, or Working are analyzed.</p> <p>This PI provides information on a 1 month lag due to gathering of project data and work package closeout requirements.</p>	<p><b>Analysis:</b> In May, a CY12 backlog reduction goal of 10% was established. PFP has reduced their backlog significantly since March. W&amp;F has reduced their numbers as well. Other projects experienced minor changes in their status. Backlog of packages results from working packages on a priority basis, mission changes, and available resource challenges, as well as creation of new packages. Using a Corrective Maintenance Yes/No flag or listing by a work package classification code in JCS, as well as more focus on closing non-applicable packages is having positive results. Future classification of low priority, and deferred work activity classification will provide a better indicator of actual maintenance efficiencies.</p> <p><b>Action:</b> Review open work packages, closing completed and no longer applicable due to mission changes, D&amp;D progress, and resource availability. Communicate the definition of Corrective Maintenance and refine the use of the JCS Corrective Maintenance Yes/No flag, and the use of Deferred Maintenance Status Code will result in more accurate reports.</p>												
<table border="1"> <thead> <tr> <th>Goal</th> <th>Trend</th> </tr> </thead> <tbody> <tr> <td>Blue</td> <td>Decreasing Trend Values for 6 mo.</td> </tr> <tr> <td>Green</td> <td>Decreasing Trend Values for 3 mo.</td> </tr> <tr> <td>White</td> <td>No Change</td> </tr> <tr> <td>Yellow</td> <td>Increasing Trend Values for 3 mo.</td> </tr> <tr> <td>Red</td> <td>Increasing Trend Values for 6 mo.</td> </tr> </tbody> </table>	Goal	Trend	Blue	Decreasing Trend Values for 6 mo.	Green	Decreasing Trend Values for 3 mo.	White	No Change	Yellow	Increasing Trend Values for 3 mo.	Red	Increasing Trend Values for 6 mo.	<p>POC: SHS&amp;Q / T. Jarecki</p>
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