Safety Investigation Recommendations Follow-Up

Dan Garrison
Darrin Nelson
Tony Nelson
Greg Smith
Tracy Yount

June 15, 2020

No Action Requested – Information Only

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Timeline

- June 13, 2018 – Incident Date
- February 2019 - Investigation concluded
- March 2019 – Initiation of report recommendations
- September 2019 – Independent survey completed
- October 2019 – Initiation of survey recommendations
- Today - Update on recommendations

Initial Recommendation List

Number	Recommendation	Status
WDR1	Establish operating procedures for bridge and gantry crane lifts. (Tony)	Complete
WDR2	Conduct an independent survey of assessment of the Safety Concerns and Close Calls program (awareness, use, follow through) (Greg)	Ongoing
WDRC1	Develop a standard lift plan for moving fixed hoist gates with gantry cranes. (Tony)	Complete
WDRC2	Revise District Safety Program requirements for gantry and bridge crane operations. (Response combined with WDR1) (Tony)	Complete, finishing training in 2020.
WDRC3	Revise the Spillway OMI to include a procedure for operation of fixed hoist gates and actions to open the swing rails when lifting a fixed hoist gate. (Tony/Dan)	Complete
WDRC4	Develop District Standard for what a good Pre-Task Plan (PTP looks like) (Greg)	Complete
WDRC5	Implement PTP including metrics and adjustments as needed (Greg)	Complete
WDRC6	Continue implementation of HPI tools (Darrin)	Ongoing
WDRC7	Develop and implement job planning requirements and standards to ensure that formal job planning is performed. (Tony)	Complete, initiating training
WDRC8	Perform actions recommended in the Tetra Tech report to correct the design of the swing rails. (Immediate actions complete) (Dan)	Complete
WDRC9	**Evaluate the practice of using working foreman (evaluation complete, actions underway)**	**Ongoing**
TTR1	Inspect spillway bays with swing rails (scheduled to coincide with operations) (Dan)	Ongoing
TTR2	Revise swing rail design (Dan)	Complete
TTR3	Analyze interim modifications made to swing rails (Dan)	Complete
TTRC1	Consider modifications to Crane 3 Block Leaders (Dan)	Complete
TTRC2	**Consider eliminating swing rails (will be addressed as part of modernization project)**	**Transferred**

Greg Smith

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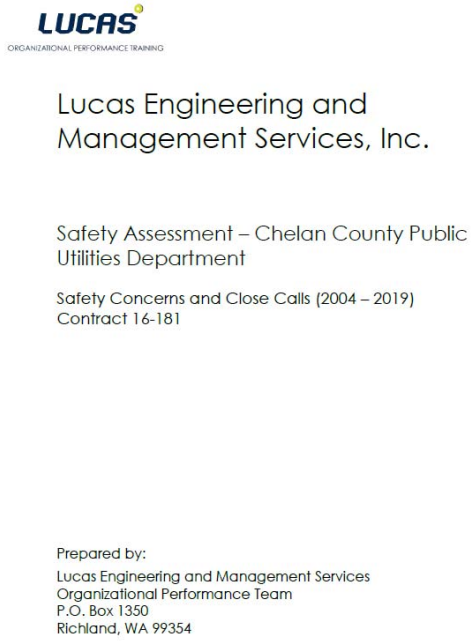
Conduct an Independent Survey

- WD Associates Root Cause Analysis Report
- In-depth report by Lucas Engineering



LUCAS
ORGANIZATIONAL PERFORMANCE TRAINING

Lucas Engineering and Management Services, Inc.

Safety Assessment – Chelan County Public Utilities Department

Safety Concerns and Close Calls (2004 – 2019)
Contract 16-181

Prepared by:
Lucas Engineering and Management Services
Organizational Performance Team
P.O. Box 1350
Richland, WA 99354

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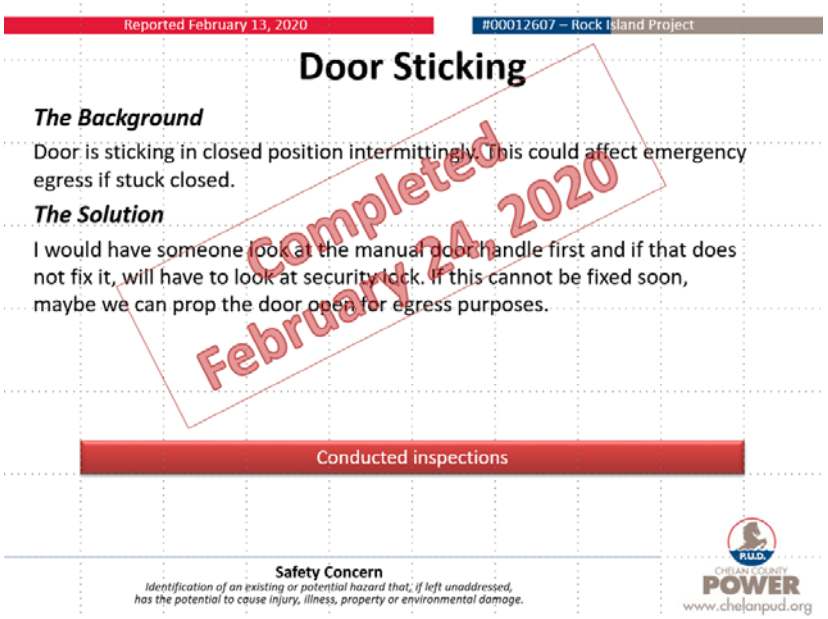
Safety Concern & Close Call Improvement

- Tribal Knowledge Transfer
- PeopleSoft Restructure
- Safety Concern & Close Call Communication



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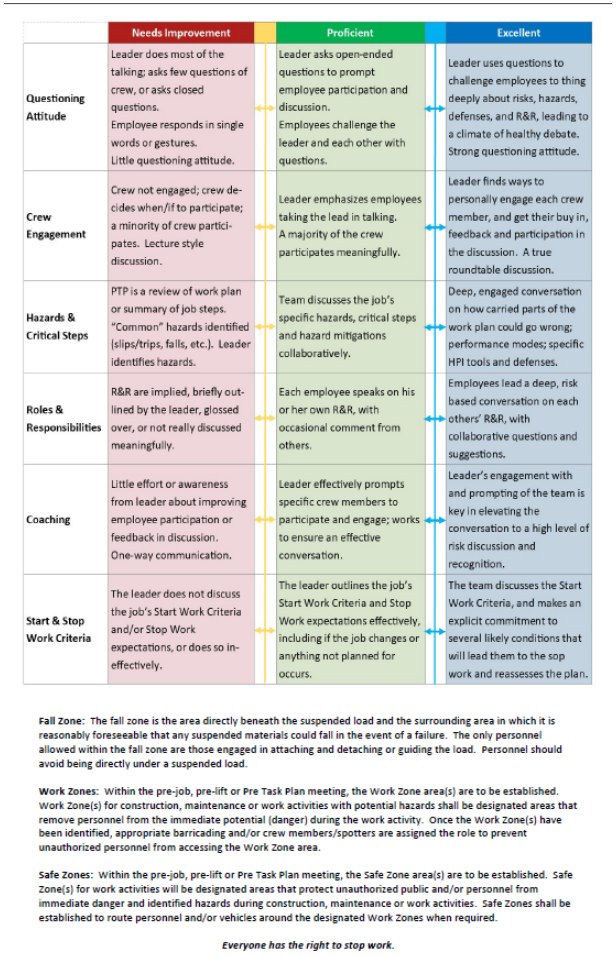
Pre-Task Plans (PTP)



	Needs Improvement	Proficient	Excellent
Questioning Attitude	Leader does most of the talking; asks few questions of crew, or asks closed questions. Employee responds in single words or gestures. Little questioning attitude.	Leader asks open-ended questions to prompt employee participation and discussion. Employees challenge the leader and each other with questions.	Leader uses questions to challenge employees to thing deeply about risks, hazards, defenses, and R&R, leading to a climate of healthy debate. Strong questioning attitude.
Crew Engagement	Crew not engaged; crew decides when/if to participate; a minority of crew participates. Lecture style discussion.	Leader emphasizes employees taking the lead in talking. A majority of the crew participates meaningfully.	Leader finds ways to personally engage each crew member, and get their buy in, feedback and participation in the discussion. A true roundtable discussion.
Hazards & Critical Steps	PTP is a review of work plan or summary of job steps. "Common" hazards identified (slips/trips, falls, etc.). Leader identifies hazards.	Team discusses the job's specific hazards, critical steps and hazard mitigations collaboratively.	Deep, engaged conversation on how carried parts of the work plan could go wrong; performance modes; specific HPI tools and defenses.
Roles & Responsibilities	R&R are implied, briefly outlined by the leader, glossed over, or not really discussed meaningfully.	Each employee speaks on his or her own R&R, with occasional comment from others.	Employees lead a deep, risk based conversation on each others' R&R, with collaborative questions and suggestions.
Coaching	Little effort or awareness from leader about improving employee participation or feedback in discussion. One-way communication.	Leader effectively prompts specific crew members to participate and engage; works to ensure an effective conversation.	Leader's engagement with and prompting of the team is key in elevating the conversation to a high level of risk discussion and recognition.
Start & Stop Work Criteria	The leader does not discuss the job's Start Work Criteria and/or Stop Work expectations, or does so ineffectively.	The leader outlines the job's Start Work Criteria and Stop Work expectations effectively, including if the job changes or anything not planned for occurs.	The team discusses the Start Work Criteria, and makes an explicit commitment to several likely conditions that will lead them to the sop work and reassesses the plan.

Fall Zone: The fall zone is the area directly beneath the suspended load and the surrounding area in which it is reasonably foreseeable that any suspended materials could fall in the event of a failure. The only personnel allowed within the fall zone are those engaged in attaching and detaching or guiding the load. Personnel should avoid being directly under a suspended load.

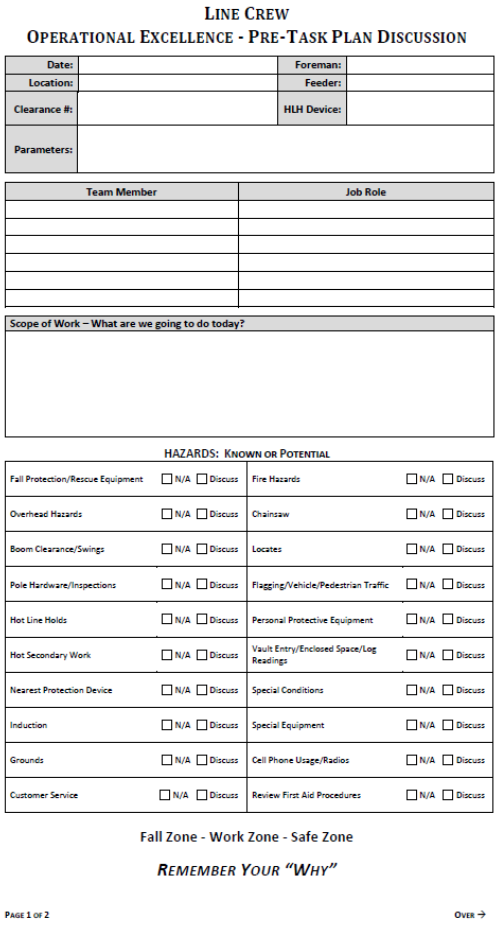
Work Zones: Within the pre-job, pre-lift or Pre Task Plan meeting, the Work Zone area(s) are to be established. Work Zone(s) for construction, maintenance or work activities with potential hazards shall be designated areas that remove personnel from the immediate potential (danger) during the work activity. Once the Work Zone(s) have been identified, appropriate barricading and/or crew members/spotters are assigned the role to prevent unauthorized personnel from accessing the Work Zone area.

Safe Zones: Within the pre-job, pre-lift or Pre Task Plan meeting, the Safe Zone area(s) are to be established. Safe Zone(s) for work activities will be designated areas that protect unauthorized public and/or personnel from immediate danger and identified hazards during construction, maintenance or work activities. Safe Zones shall be established to route personnel and/or vehicles around the designated Work Zones when required.

Everyone has the right to stop work.

- Create a unified and effective PTP

Pre-Task Plans (PTP)



LINE CREW
OPERATIONAL EXCELLENCE - PRE-TASK PLAN DISCUSSION

Date:		Foreman:	
Location:		Feeder:	
Clearance #:		HLH Device:	
Parameters:			

Team Member	Job Role

Scope of Work – What are we going to do today?

HAZARDS: KNOWN OR POTENTIAL

Fall Protection/Rescue Equipment	☐ N/A ☐ Discuss	Fire Hazards	☐ N/A ☐ Discuss
Overhead Hazards	☐ N/A ☐ Discuss	Chainsaw	☐ N/A ☐ Discuss
Boom Clearance/Swings	☐ N/A ☐ Discuss	Locates	☐ N/A ☐ Discuss
Pole Hardware/Inspections	☐ N/A ☐ Discuss	Flagging/Vehicle/Pedestrian Traffic	☐ N/A ☐ Discuss
Hot Line Holds	☐ N/A ☐ Discuss	Personal Protective Equipment	☐ N/A ☐ Discuss
Hot Secondary Work	☐ N/A ☐ Discuss	Vault Entry/Enclosed Space/Log Readings	☐ N/A ☐ Discuss
Nearest Protection Device	☐ N/A ☐ Discuss	Special Conditions	☐ N/A ☐ Discuss
Induction	☐ N/A ☐ Discuss	Special Equipment	☐ N/A ☐ Discuss
Grounds	☐ N/A ☐ Discuss	Cell Phone Usage/Radios	☐ N/A ☐ Discuss
Customer Service	☐ N/A ☐ Discuss	Review First Aid Procedures	☐ N/A ☐ Discuss

Fall Zone - Work Zone - Safe Zone

REMEMBER YOUR "WHY"

PAGE 1 OF 2 OVER →

- Identifying known or potential hazards

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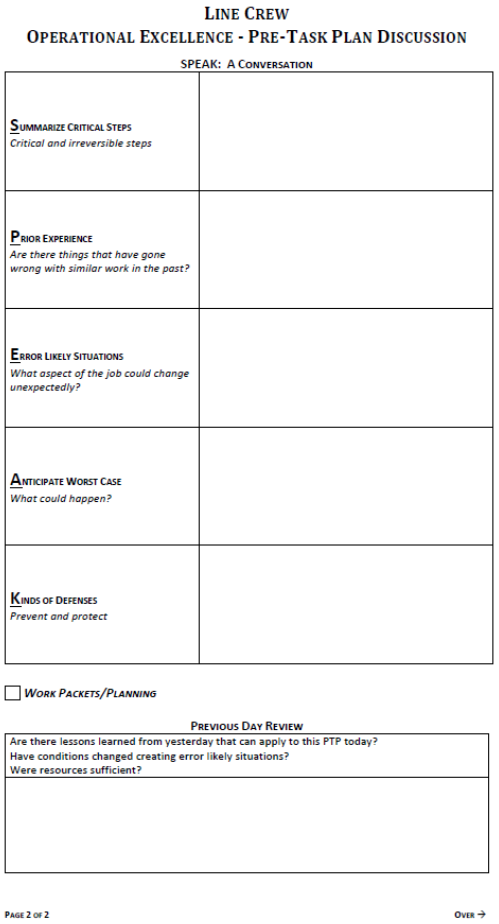
Pre-Task Plans (PTP)



LINE CREW
OPERATIONAL EXCELLENCE - PRE-TASK PLAN DISCUSSION

SPEAK: A CONVERSATION

SUMMARIZE CRITICAL STEPS *Critical and irreversible steps*	
PRIOR EXPERIENCE *Are there things that have gone wrong with similar work in the past?*	
ERROR LIKELY SITUATIONS *What aspect of the job could change unexpectedly?*	
ANTICIPATE WORST CASE *What could happen?*	
KINDS OF DEFENSES *Prevent and protect*	

☐ *WORK PACKETS/PLANNING*

PREVIOUS DAY REVIEW

Are there lessons learned from yesterday that can apply to this PTP today? Have conditions changed creating error likely situations? Were resources sufficient?

PAGE 2 OF 2 OVER →

Summarize Critical Steps

Prior Performance

Error Likely Situations

Anticipate Worst Case

Kinds of Defenses

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Pre-Task Plans (PTP)

- Capture and Measure

Department : Fiber & Telecom (4)

Sanford, Brett	Al Sherman, Garrett Hills, Preston Sillito, Ed Mott	Fiber & Telecom	12/11/2019	Good discussion of the new service being installed through several underground vaults and into the Stemilt Building. Pinch points with the vault lids, falls for bucket truck use or pole climbing, and struck by/caught between with the semi trucks and vehicles driving past the area. The crew will utilize an additional bucket truck for the vault that will have the most traffic driving by to act as a barrier for personnel protection. Overall great conversation and plan for the work to be done.
Sanford, Brett	Rick Dueman, Kendall Scott, CJ Christensen, Luke Reeves	Fiber & Telecom	12/12/2019	Crew to install a new underground serviceline on birch mountain. Thorough discussion of the logistics and sequence of install, figure 8's will need to be generated in several locations, snow/ice, repetition motion, pinch polints and public hazards were all key points of discussion during the pre-task plan.
Sanford, Brett	Rick Dueman (Foreman), Kendall Scott, CJ Christensen, Luke Reeves & Randy Pelton (Flagger).	Fiber & Telecom	1/2/2020	Crew stringing new fiber out on the new poles installed by our line crew at Pine Flatts this past summer. Excellent step by step walkthrough of work plan and roles/responsibilities of each crew member. Traffic hazards covered and communicated with Randy. They will be slowly rolling out the 144 strand cable which will involve them conducting a stop and go at each pole as they attach to the Seattle brackets. Communication will be made via radio with Luke at the reel, CJ in the truck, Kendall in the bucket and Rick in the foreman's truck. Everyone reiterated to keep out of the road as much as possible when on foot and to always look out for each other.

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Tony Nelson

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Establish District Crane Standards & Program Requirements

- Standard
- Certification
- Qualification

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Job Planning and Standards

- Created four categories of work
  - High Risk: Complex Task
  - High Risk: Simple Task
  - Low Risk: Complex Task
  - Low Risk: Simple Task
- Developed planning requirements depending on complexity and risk

Dan Garrison

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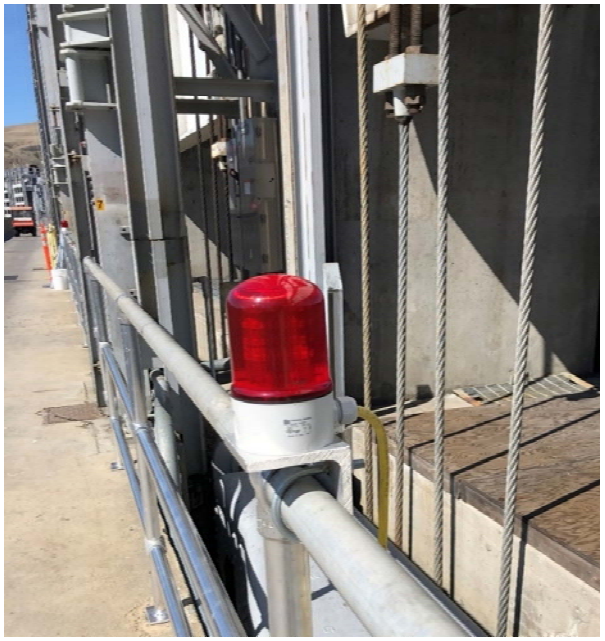
Engineering Controls

Spillway Access Procedures

Warning Signs & Lights

Indicating Lights



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Engineering Controls

Structural Improvements

Gusset Plates & Limit Switches

Rail Inspections

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Darrin Nelson

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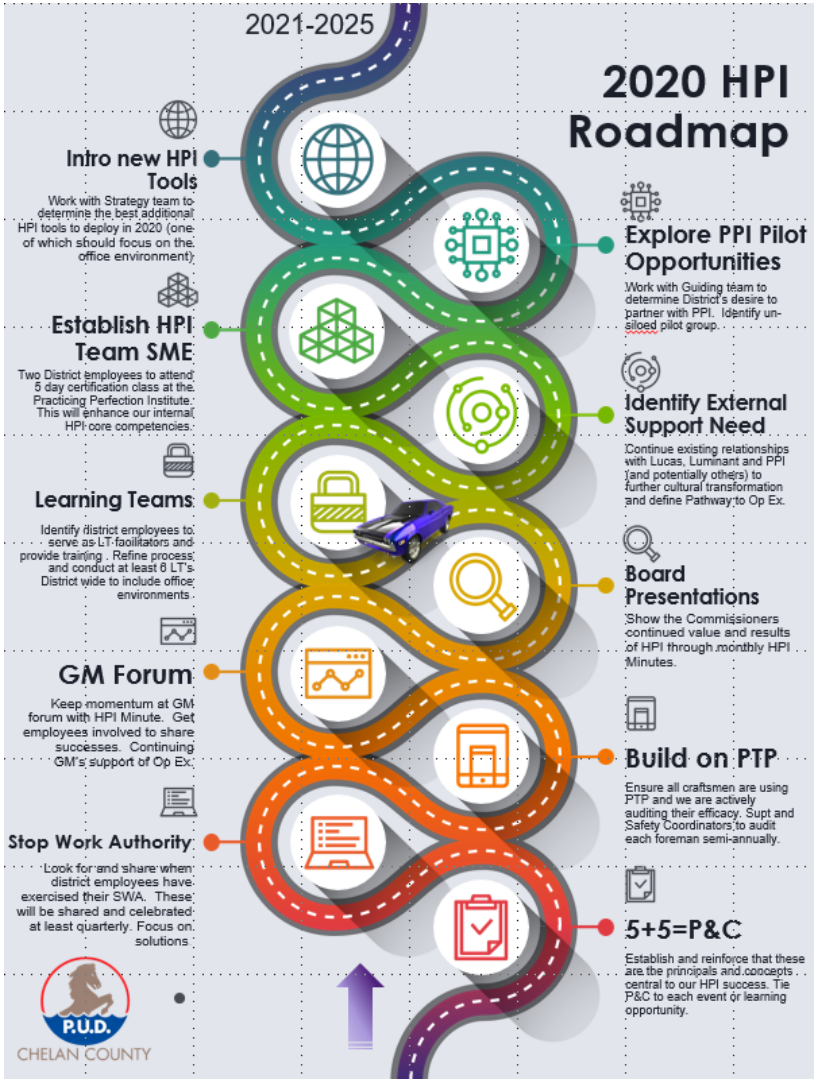
HPI



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Questions?

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