DAILY WORK HAZARDS DUE TO FACILITY CONSTRUCTION









CONSTRUCTION WORKER AT WASTEWATER PLANT FALLS 25 FEET

Worker was installing rebar and fell 25 feet into concrete basin when safety harness came loose.

May 2015

FOUR HOSPITALIZED WHEN DELIVERY DRIVER PUMPED WRONG CHEMICAL AT TREATMENT PLANT

September 2015

Driver mistakenly pumped chlorine instead of fluoride into 500 gallon fluoride tank, emitting poisonous fumes.

SUBCONTRACT PIPE WELDER AT WASTEWATER PLANT DIES OF INJURIES FROM EXPLOSION

58 year old welding inside a methane glass dome at plant. OSHA investigation revealed contractor failed to train workers about hazards of confined spaces and methane gas.

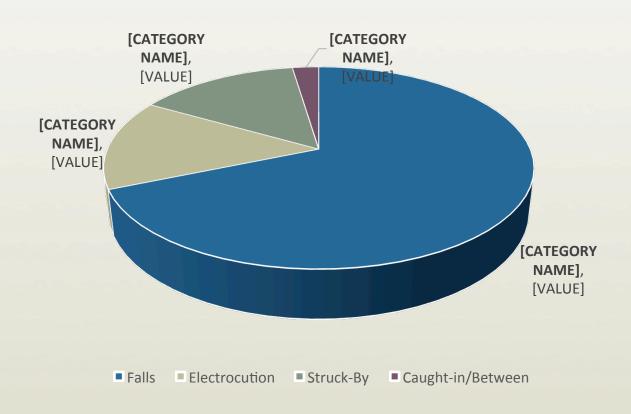
February 2014



4,679 WORKER FATALITIES — OSHA 2014

> 874 WITHIN CONSTRUCTION

FATAL FOUR – RESPONSIBLE FOR > 50% OF CONSTRUCTION DEATHS





Plant Personnel
Daily Roles /
Responsibilities





Increased Hazards

Facility Construction



TOP 10 MOST FREQUENTLY CITED OSHA **STANDARDS**

FISCAL YEAR 2015 (10/1/2014 – 9/30/2015)

- 1.Fall protection, construction (29 CFR 1926.501)
- 2. Hazard communication standard, general industry (29 CFR 1910.1200)
- 3. Scaffolding, general requirements, construction (29 CFR 1926.451)
- 4. Respiratory protection, general industry (29 CFR 1910.134)
- 5. Control of hazardous energy (lockout/tagout), general industry (29 CFR 1910.147)
- 6. Powered industrial trucks, general industry (29 CFR 1910.178)
- 7. Ladders, construction (29 CFR 1926.1053)
- 8. Electrical, wiring methods, components and equipment, general industry (29 CFR 1910.305)
- 9. Machinery and Machine Guarding, general requirements (29 CFR 1910.212)
- 10. Electrical systems design, general requirements, general industry (29 CFR 1910.303)

MITIGATING THE RISK

FOR PLANT & CONTRACTOR PERSONNEL

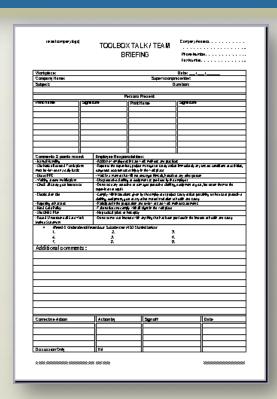






EFFECTIVE COMMUNICATION

- SITE SAFETY REQUIREMENTS
- Daily Safety Briefings
 - > AKA TOOLBOX TALKS
- Point of Contact:
 - CONTRACTOR
 - PLANT







ADVANCE PLANNING

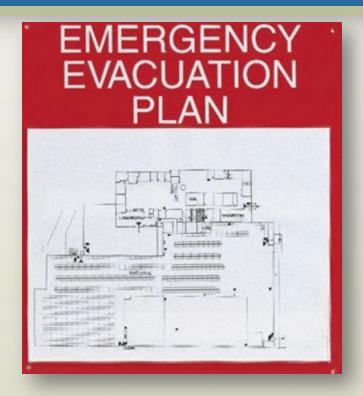
- CONTRACTOR
 PREQUALIFICATION
- PROJECT SCHEDULE
- PROPER STAFFING

0	Task Name	Start	Finan	Duration	200 2007 100 2007 100 2007 Apr 2007 Apr
1	Initiate PMO	1/3/2007	1/15/2007	8d Sh	-
2	Project Start	1/3/2007	1/3/2007	Od	•
3	Determine outcomes & scope	1/3/2007	1/5/2007	34	•
4	Align with business	1/8/2007	1/15/2007	54	-
5	Plan PMO	1/15/2007	2/21/2007	27d 3h	—
6	Determine process & procedures	1/15/2007	2/15/2007	216	-
7	Design communication campaign	5/15/2007	1/19/2007	56	-
8	Secure management sponsorship	2/13/2007	2010007	64	-
9	Implement PMO	2/22/2007	3/9/2007	11d 3h	—
10	Select existing projects	2020007	3/1/2007	54	•
11	Align with process & procedures	3/2/2007	3/9/2007	64	—
12	Establish monitoring criteria	2/22/2007	2219907	34	
13	Establish performance metrics	2/22/2007	2/27/2007	34	
14	Review PMO	4/11/2007	5/2/2007	15d 5h	V
15	Obtain Needback	3/29/2007	4/12/2007	104	—
16	Evaluate lessons learned	4050007	5/2/2007	54	-
17	PMO complete	5/2/2007	5/2/2007	0.6	



TRAINING

- SITE SPECIFIC TRAINING
- CONTRACTOR SAFETY
 ORIENTATION
- EMERGENCY ACTION
 PROCEDURES







COORDINATION OF ACTIVITIES

- LOTO, CONFINED SPACE ENTRY, HOT WORK
- HOISTING / CRANE
 OPERATIONS
- BRINGING
 CHEMICALS ONSITE





COORDINATION OF ACTIVITIES

- WORK WITHIN
 OCCUPIED AREAS
- Designated or Restricted Areas
- Required
 Shutdowns







INVOLVEMENT

- ENGAGE PLANT PERSONNEL
- PRE-CONSTRUCTION
 ACTIVITIES
- DAILY SAFETY BRIEFINGS





QUESTIONS



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