



# ***Contractor Safety Meeting***

***October 2015***

**FCX  
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NYSE**

[fcx.com](http://fcx.com)

A graphic on the right side of the slide consisting of several concentric rings of varying widths and colors (orange, red, brown, green). The rings are arranged in a spiral-like pattern, with the innermost ring being a solid dark brown circle. The text 'VALUE AT OUR CORE' is centered within this innermost circle.

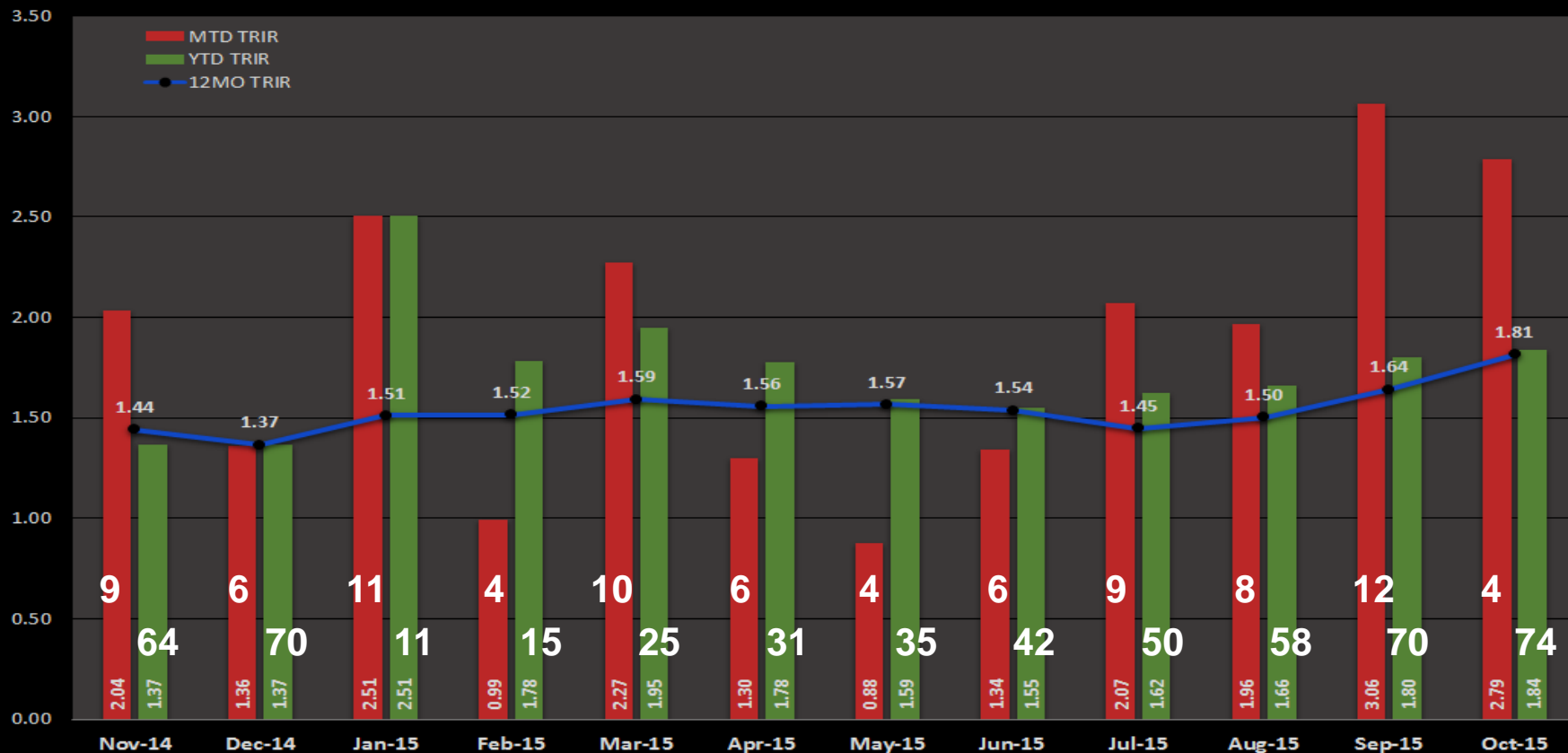
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# Safety Performance – October 11, 2015

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## 12 MONTH ROLLING TRIR



Day of the Year	Incident Free Shifts		Employees working Safely (FMMO Only, includes First Aids)			REPORTABLE INJURY RATE				LTIR			SM Rate		PROPERTY DAMAGE			DAYS W/O LTA	Hrs W/O LTA	Days W/O Rec.	Hrs W/O Rec.	MTD HEHI	YTD HEHI	YTD HEHI Rate	HEHI Target
	284	MTD	YTD	TOTAL	MTD	YTD	MTD	YTD	QTD	Target	MTD	YTD	Target	2015 YTD	2014 YTD	MTD	YTD								
Number	9	168	3243	3237	3096	4	74	4	1.31	0	25	0.33	18.91	18.81	21	520	12.89	16	418548	5	130537	0	28	0.70	0.98
Rate			This material has been prepared by the Freeport-McMoRan Copper & Gold Department of Occupational Health and Safety - Distribution and Use of this material is limited to Authorized Recipients only.																						



# 2015 TRIR Breakdown

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TRIR BREAKDOWN	MTD REP	MTD TRIR	YTD REP	YTD TRIR	4QTD REP	4QTD TRIR
FMMO	4	<b>3.79</b> 211101	50	<b>1.84</b> 5421783	4	<b>3.79</b> 211101
CONTRACTORS	0	<b>0.00</b> 76080	24	<b>1.81</b> 2625799	0	<b>0.00</b> 76080
<b>CURRENT TOTAL MORENCI ALL</b>	<b>4</b>	<b>2.79</b> <b>287181</b>	<b>74</b>	<b>1.84</b> <b>8047582</b>	<b>4</b>	<b>2.79</b> <b>287181</b>

Incident Rate =  $\frac{\# \text{ of Incidents} \times 200000}{\# \text{ of Hours Worked}}$


## Weekly Injury & High Risk Event Summary (10/5/2015 – 10/11/2015)

Incident Date	Incident Type	Organization	Division	Short Description
10/5/2015	Medical Treatment	Mine	Mine Maintenance	Employee's finger was caught between a cart handle and dipper bell resulting in an open fracture
10/6/2015	Medical Treatment	Processing	Crush & Convey	An employee had a small piece of metal in his eye.
10/7/2015	First Aid	Mine	Mine Maintenance	An employee was removing a wire rope sling when it recoiled and struck him in the nose causing a minor bruise.
10/8/2015	First Aid	Processing	Metcalf Concentrator	An employee was descending a vertical step ladder when he felt pain in his right leg.
10/9/2015	Restricted Duty	Processing	Morenci Concentrator	An employee slipped on the last step and felt pain in his leg.



# ***The road to success must be paved with optimism!***

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<b><i>Division</i></b>	<b><i>Date of Last Rep. Injury</i></b>	<b><i># of Days without Rep. Injury</i></b>
MAINTENANCE SERVICES	8/25/2015	47 <b>5</b>
HYDROMET & CLP	9/12/2015	29 <b>6</b>
 LEACHING	7/22/2014	446 <b>1</b>
MORENCI CONCENTRATOR	10/9/2015	2
METCALF CONCENTRATOR	10/1/2015	10
CRUSH & CONVEY	10/6/2015	5
MINE MAINTENANCE	10/5/2015	6
FRAGMENTATION/LOADING/SUPPORT	7/26/2015	77 <b>4</b>
HAULAGE	9/22/2015	19
RESOURCE MANAGEMENT	11/17/2014	328 <b>2</b>
ADMINISTRATION	2/10/2015	243 <b>3</b>
MORENCI MERCANTILE	9/16/2015	25 <b>7</b>
CONTRACTORS	9/19/2015	22 <b>8</b>





# Environmental Services

**Cynthia Christenson**



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# ***Oil-Filled Electrical Equipment / PCB Management Training Morenci 2015***

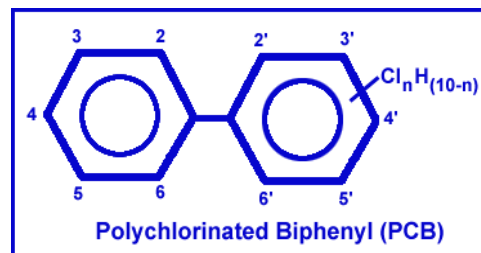


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# What are PCBs?

- PCB - acronym for polychlorinated biphenyl
- PCBs
  - Are produced by attaching one or more chlorine atoms to a biphenyl molecule
  - Have a heavy, liquid, oil-like consistency and weigh 10-15 lbs. per gallons
  - Are very stable (one of the most stable organic compounds known)
  - Exhibit low water solubility, low vapor pressure, low flammability, high heat capacity, low electrical conductivity, and have a favorable dielectric constant for use in electrical equipment
  - The majority of PCBs were manufactured between 1929 and 1977





# ***Health and Environmental Effects of PCBs***

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## ➤ Health

- Toxic and persistent
- Can enter the body through the lungs, gastrointestinal tract and skin
- Circulate throughout the body and stored in fatty tissue
- Carcinogen

## ➤ Environmental

- Stable chemical and decomposes very slowly once released into the environment
- Can be taken up and stored in the fatty tissue of organisms
- Can be concentrated in freshwater and marine organisms and cause adverse effects on environmentally important freshwater invertebrates
- Can impair reproductive success in birds and mammals
- Are toxic to fish at very low exposure levels and can adversely effect their survival rate and reproductive success





# ***Where Are PCBs Found?***

- In oil-filled electrical equipment such as:
  - Transformers (including potential and circuit)
  - Capacitors (both small and large)
  - Light Ballasts
  - Oil-Filled Circuit Breakers (OCBs)
  - Magnets
  - Voltage Regulators
  - Manual or Automatic Circuit Reclosures
  - Busing Potential Devices
  - Feeder Regulators
  - Bushings
- In non-liquid forms such as:
  - Compound/Tar Filled Equipment



# ***Applicable Regulations & FCX Policy***

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- 40 CFR Part 761, Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce and Use Prohibitions;
- 40 CFR Part 112, Oil Pollution Prevention;
- Freeport-McMoRan Inc. Polychlorinated Biphenyls (PCBs) Environmental Management Practice; and
- *Oil-Filled Electrical Equipment & PCB Management Plan* – the next portion of this presentation summarizes key components of the Plan.



# ***Oil-Filled Electrical Equipment Management***

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## ➤ Equipment Inventory

- Master inventory of oil-filled electrical equipment in EDMS software
- Analytical documentation to support the PCB concentration of oil-filled electrical equipment is included in inventory
- This EDMS inventory represents the official current inventory of oil-filled electrical equipment on site as well as the documented PCB concentration of that equipment
- Currently, the Environmental Department maintains the database with information given by Electrical Departments





# ***What is the role of a contractor?***

## ➤ Contractor responsibilities

- Ensure that the Freeport-McMoRan Inc. project manager has complete information on each and every piece of oil-filled equipment
- If purchasing on behalf of Freeport-McMoRan Inc., provide documentation of PCB concentration of oil in any oil-filled electrical equipment (nameplate PCB concentration is not documentation)
- Notify Environmental Department of any oil-filled electrical equipment coming on site, moving, or leaving site OR removing/replacing oil in oil-filled electrical equipment  
(contact Cynthia Christenson 928-965-1030)

# *Removing or Replacing Oil*

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## ➤ Removing/Replacing Oil

- When it is necessary to remove and replace or add oil to a transformer the following must occur:
  - Verify that the PCB concentration of the oil in the transformer has been established
  - The oil may be removed and placed in DOT approved containers then transferred to the Environmental Yard for determination of ultimate disposition
  - Do not mix the oil from equipment with any other oil source!
  - Ensure Environmental Department has documentation of new oil going into the equipment



# ***Oil-Filled Electrical Equipment Sent Offsite***

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## ➤ Replacing or Repairing Equipment

- Morenci will not accept transferred or purchased oil-filled electrical equipment that was at any time reclassified from a PCB concentration  $\geq 50$  ppm
- Only equipment with a verified PCB concentration  $< 2$  ppm will be permitted to be sent off-site for repair without coordinating with the Environmental Department prior to transport
- Equipment with concentrations  $\geq 2$  ppm must be coordinated with the Environmental Department to ensure draining and proper management of oils



# ***Disposal of Oil-Filled Electrical Equipment***

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## ➤ Equipment Disposal

- Any oil-filled electrical equipment for disposal must go directly to the Environmental Yard. Please do not empty oil out of electrical equipment for disposal
- Upon removing a electrical equipment or light fixtures from service, all fluorescent light ballasts and/or capacitors designated for disposal must be immediately removed from the fixture and evaluated for PCBs. All ballasts and capacitors designated for disposal must be taken to the Environmental Yard
- Some apparent dry electrical equipment may contain small amounts of fluid or potting material which may contain PCBs therefore, all dry electrical devices should be taken to the Environmental Yard for evaluation and not placed directly into scrap metal storage containers



# ***Spill Response and Reporting***

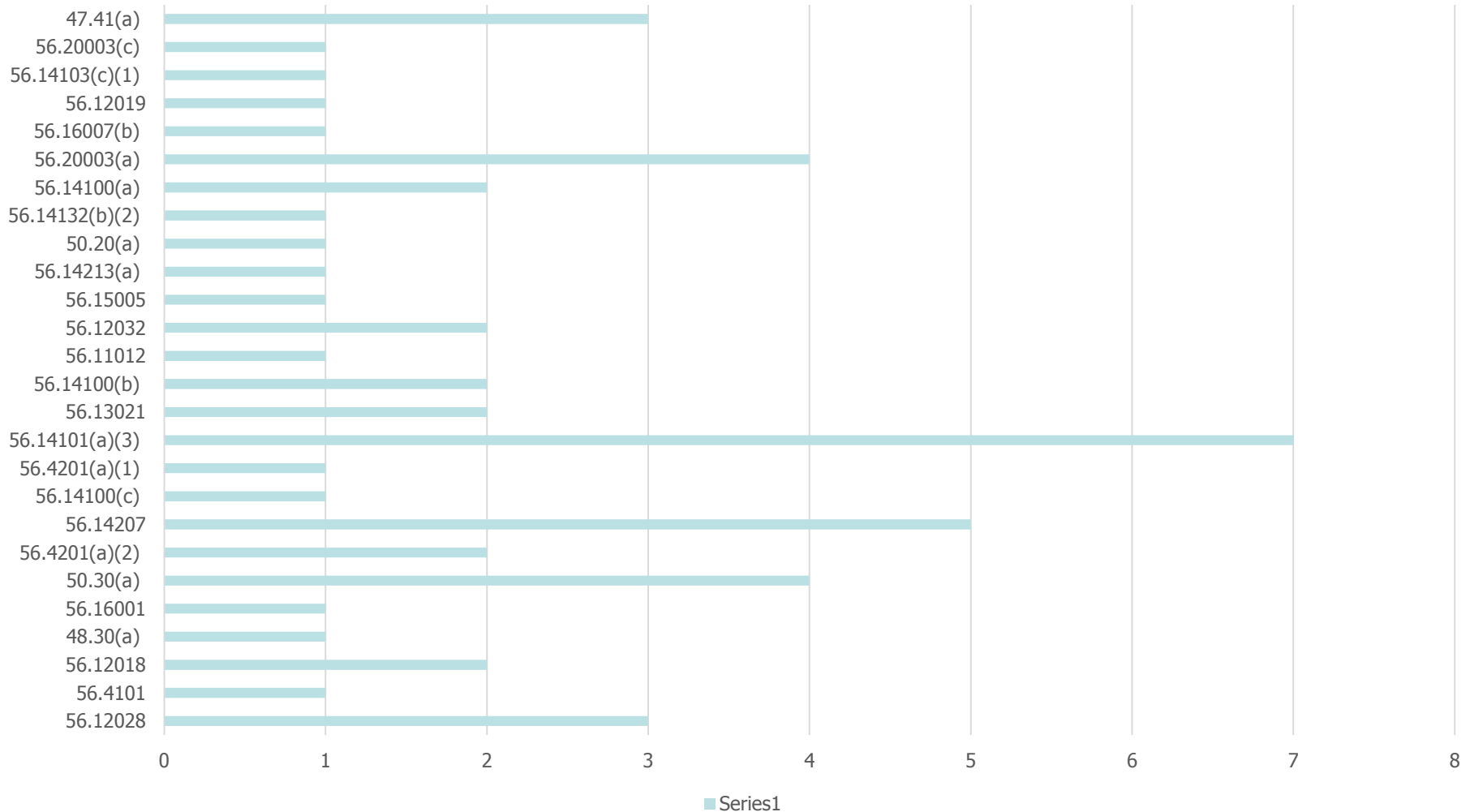
- Refer to Morenci's incident reporting protocols in the event that oil is leaking or has been spilled from electrical equipment.
  
- General description of responsibilities:
  - The Environmental Department must be immediately notified through the spill hotline (928) 865-7745 (SPIL) and
  - The Environmental Department with support from the functional area responsible for the equipment will work together to address the spill



# MSHA

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## Contractor Citations







# Contractor Website

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- <https://fcx365-public.sharepoint.com/morenci>

CIVIL NO ACCESS/TERRITORY FORMS ... General 1/31/2015 1:24 PM

Documents - Morenci External Contractors

✓	Name	Item Child Count
	Contractor Forms	... 4
	Contractor OnBoarding and Forms	... 9
	Contractor Safety Manual	... 1
	Contractor Safety Meetings	... 10
	Dolphin System-Product Approvals	... 3
	Environmental	... 0
	PFE's	... 41
	Radiation Safety	... 1
	Safe Production Standards	... 43
	Safety Advisories	... 1
	Safety Alerts	... 27
	Tool Box Talks	... 11
	Training Classes Information	... 4
	Environmental Monthly Green Share APP-Aquifer Protection Permit July2015	... 0
	Environmental Monthly Green Share Contaminated Rag Disposal June2015	... 0
	Environmental Monthly Green Share Universal Waste Management Aug2015	... 0

# Potentially Fatal Events

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## BRIEF DETAILS OF ADVISORY:

A forklift operator was loading cradles of empty cylinder gases into an open dry container for transport to the lowlands; he had loaded two cradles without incident and was carrying the third cradle towards the container to be loaded. As the forklift operator made a left turn to approach the container for loading, the lower right side of the lifted cradle struck the victim, who was standing in the area directing other forklift traffic. As a result of the accident the victim suffered a closed fracture of his right fibula.



- Revise the SOP (MM\_SOP\_004 - Forklift Operation)
- Re-socialize the revised SOP with all operators (MM\_SOP\_004)
- Conduct a daily Safety Talk every morning before starting the shift for all warehouses
- Place signage when the forklift is operating in the loading and unloading areas, indicating "No Entry – Operator is Working"



# ***Demolition and Deconstruction Policy***

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## **Scope**

This policy applies to all FCX Project Managers, Employees and Contractors working at FCX Operation sites.

The manner of preparing for Demolition work will require three key steps that are supported by four essential documents in this procedure. Management and preparation of these documents is the responsibility of the Project Manager, Construction Manager, Engineer or any Facilities Authorized Employee to perform demolition work.

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# ***Demolition Work Plan***

## **3.1 Demolition Work Plan**

Due to the high level of risk during deconstruction activities such as utility removal, structural deconstruction and excavation, the Demolition Work Plan is prepared to eliminate and or minimize the risk for injuries, equipment damage and harm to the environment while executing this work.

The Demolition Work Plan document is provided to support the initial steps in planning the demolition activity. This document is required as it will provide a detailed description of the work to be performed and includes an Execution Plan for this work that can provide the necessary details to the approver. The Execution portion of this document can be supplemented with the Project Scope of Work (SOW) or the Contractors Execution Plan for the work but will include at a minimum execution plans for Safety, Environmental, Hazardous Material Abatement, Electrical/Instrumentation/Communication, Structural/Mechanical/Piping and Foundations/Excavations.



## (SAMPLE) Demolition Work Plan

**Purpose:** Due to the high level of risk during deconstruction activities such as utility removal, structural deconstruction and excavation, this Work Plan is prepared to eliminate and or minimize the risk for injuries, equipment damage and harm to the environment while executing this work.

**Policy:** A demolition permit is required for demolition work which includes the total or partial deconstruction of any structure. Demolition may not commence until a permit is obtained.

**Project Manager:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Area to be demolished:** \_\_\_\_\_

**Description of demolition:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Demolition Schedule:** Start: \_\_\_\_\_ Finish: \_\_\_\_\_

### Work Plan Required Documentation:

- |  |  |
|--|--|
| <input type="checkbox"/> Demolition Work Plan (this document)      | <input type="checkbox"/> Demolition Checklist              |
| <input type="checkbox"/> Demolition Plan Map Utilities             | <input type="checkbox"/> Demolition Plan Map Environmental |
| <input type="checkbox"/> Demolition Permit (prepared for approval) | <input type="checkbox"/> Scope of Work                     |



### Execution Plan for this Demolition:

• **Safety:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

• **Environmental:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

• **Electrical/Instrumentation/Communication:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

• **Structure/Mechanical/Piping:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

• **Foundations/Excavation:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# ***Demolition Plan Map***

## **3.2 Demolition Plan Map**

Prior to a permit being issued, the Demolition Plan Map must be completed by a qualified person. The Demolition Plan Map must include the footprint, as-built, blue print etc. of the area to be demolished/deconstructed. It must also contain a list of every source of energy into and out of the demolition area. Each of those sources must be clearly identified on the Plan Map. This work sheet can also be used to identify materials in the Environmental management portion of the plan.



## ENERGY SOURCES

(ELECTRICAL,MECHANICAL,UTILITIES,INSTRUMENTATION)

1. -
2. -
3. -
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34. -
35. -

[illegible]





# ***Demolition Checklist***

## **3.3 Demolition Checklist**

The project manager or their designee is responsible for the management and completion of the checklist process. All sections must be complete for a permit to be issued.

The Demolition Checklist is intended to capture all work activities, inspections, verifications, surveys and reviews required to ensure all hazards have been identified and the proper measures have been taken to eliminate or minimize risk. This checklist is the preparation work of the Demolition Procedure and is the next step of activities that must occur to meet the requirements for approval. The Checklist must have all listed Subject Matter Experts (SME) signatures of approval and verification completed prior to issuance of the Demolition Permit.

# DEMOLITION CHECKLIST

PROJECT NAME:	PROJECT MANAGER:
PROJECT FMI SITE:	SITE LOCATION:

*Project manager or designee is responsible for management of checklist process.*

Required Actions		Responsibility and Approvals	
Yes	N/A	<b>ELECTRICAL-INSTRUMENTATION-COMMUNICATION</b>	
<input type="checkbox"/>	<input type="checkbox"/>	Electrical-Instrumentation-Communication De-Energize area walkthrough of Demolition Area	
<input type="checkbox"/>	<input type="checkbox"/>	All Electrical Isolated at MCC's or Cabinets. Verification conducted in Field and Locks Placed by SME.	
<input type="checkbox"/>	<input type="checkbox"/>	All Instrumentation Isolated at MCC's or Cabinets. Verification conducted in Field and Locks Placed by	
<input type="checkbox"/>	<input type="checkbox"/>	All Communication Systems Isolated at MCC's or Cabinets. Verification conducted in Field and Locks	
<input type="checkbox"/>	<input type="checkbox"/>	Review of Demolition Plan Map conducted with each SME for this section.	
<input type="checkbox"/>	<input type="checkbox"/>	Method of removal/demolition for Electrical-Instrumentation-Communication systems reviewed	
<input type="checkbox"/>	<input type="checkbox"/>	Air Gapping of all Electrical-Instrumentation-Communication Sources completed.	

Comments-Special Instructions:

Yes	N/A	<b>ENVIRONMENTAL</b>	
<input type="checkbox"/>	<input type="checkbox"/>	MOC Generated MOC#	
<input type="checkbox"/>	<input type="checkbox"/>	Review Environmental Demolition Map and Material Locations with Environmental Dept. SME Walkthrough	
<input type="checkbox"/>	<input type="checkbox"/>	Review of Demolition Plan Map conducted and accurate for material identification.	
<input type="checkbox"/>	<input type="checkbox"/>	Hazardous Material Abatement Reviewed and Completed. NESHAP Notification Scheduled	
<input type="checkbox"/>	<input type="checkbox"/>	Review Demolition emissions plan. Does the plan address generation of dusts, fumes or other	
<input type="checkbox"/>	<input type="checkbox"/>	Material Segregation Plan Developed and Reviewed with SME	

Comments-Special Instructions:

Yes	N/A	<b>STRUCTURE-MECHANICAL-PIPING</b>	
<input type="checkbox"/>	<input type="checkbox"/>	Review of Demolition Plan Map with SME's completed. Walkthrough of Demolition with SME's completed.	
<input type="checkbox"/>	<input type="checkbox"/>	All Mechanical Energy sources identified, located and Isolated at designated blocking locations outside of	
<input type="checkbox"/>	<input type="checkbox"/>	All Piping Energy sources identified, located and Isolated at designated blocking locations outside of	
<input type="checkbox"/>	<input type="checkbox"/>	Air Gapping of all Piping and Mechanical Energy sources complete.	
<input type="checkbox"/>	<input type="checkbox"/>	Structural review has been conducted of any remaining connected structure or other structure	
<input type="checkbox"/>	<input type="checkbox"/>	Method of removal/demolition of Structural-Mechanical-Piping systems has been reviewed and	

Comments-Special Instructions:

FOUNDATIONS-EXCAVATION			
Yes	N/A	Identification of Sub-Surface Foundations reviewed and complete, based upon current or historical	
<input type="checkbox"/>	<input type="checkbox"/>	Identification of all Sub-Surface utilities conducted and acceptable based upon current or historical	
<input type="checkbox"/>	<input type="checkbox"/>	Walk through of Demolition area conducted with Blue Stake Representatives.	
<input type="checkbox"/>	<input type="checkbox"/>	Blue Stake Permit Issued. <i>(if not required see comments this)</i>	

Comments-Special Instructions:

Yes	N/A	<b>SAFETY</b>	
<input type="checkbox"/>	<input type="checkbox"/>	Barricading-Work Area control plan reviewed.	
<input type="checkbox"/>	<input type="checkbox"/>	Traffic Control Plan reviewed with Safety Representative. Does the plan include traffic routes for	
<input type="checkbox"/>	<input type="checkbox"/>	Demolition Methods i.e. Oxy-Acet Cutting, Hydraulic Shear, Mobile Equipment, Blasting. Reviewed with	
<input type="checkbox"/>	<input type="checkbox"/>	Review Contractors Pre-Task Job Safety Analysis for daily work hazard recognition. Does it meet or exceed	
<input type="checkbox"/>	<input type="checkbox"/>	All Safety Permitting for Demolition identified and required Work Plans in place for issuance to	
<input type="checkbox"/>	<input type="checkbox"/>	Walk through of Demolition work site conducted with Safety Representatives prior to sign-off	

Comments-Special Instructions:

PROJECT MANAGEMENT		CONTRACTOR	
DATE:		DATE:	
NAME:		NAME:	
TITLE:		TITLE:	
SIGNATURE:		SIGNATURE:	

By signing I verify all information on this form is accurate and all actions completed.

By signing I verify all information on this form has been reviewed and will abide by



# ***Demolition Permit***

## **3.4 Demolition Permit**

Once the above requirements have been met, a completed Demolition Permit is required prior to starting any demolition/deconstruction activities. The Demolition Permit is to be signed by Contractor Safety and Project Management (or their designee), FMI Safety and Facility/Project Manager (or their designee) and the environmental representative after completion of a thorough walk through of the demolition area.

applied to the permit. **PERMIT NO.**