PROJECT MANGEMENT PLAN EXAMPLES

Safety Integration - Prioritization of Facility Hazards Examples

Example 20

7.7 PRELIMINARY HAZARD ANALYSIS

Table 7-1 Preliminary Hazard Analysis (PHA) Overview for 779 Cluster's Decommissioning and Dismantlement

Major Work Task	Hazard	Cause	Preventive Measures
Perform building walkdowns to identify Integrated Work Control Package (IWCP) work steps.	Tripping, falling, exposure to chemicals, hazardous substances and / or radioactive materials. Also exposure to noise hazards.	No planning, lack of communicating between work groups, improper use of Radiological Work Permits (RWPs), not following room or building instructions.	▪ Develop Activity Hazard Analysis (AHA). ▪ Conduct effective pre-evolution briefings. ▪ Follow all building instructions and postings. ▪ Ensure all personnel have been properly trained before entry.
Move office equipment and furniture to prepare for D&D activities.	Back strains, pinch points, extremity injuries due to falling objects or moving vehicles.	Improper lifting of equipment, careless handling of equipment, improper planning and walkdowns, no continuing observations or use of the buddy system.	▪ Proper training conducted and documented. ▪ Use of the buddy system. ▪ Proper use of forklifts and trucks including operating alarm systems and brakes. ▪ Planning meetings and briefings completed. ▪ Proper use of AHA and PPE.
Perform hazard analysis characterization activities. This includes asbestos, beryllium (Be), chemical, lead and radiological sampling.	Overexposure to substances, accidental inhalation of substances, absorption into skin of substances, eye and skin irritation.	Improper use of PPE; PPE not being used; Improper sampling; not following prescribed sampling procedures; Improper transport or	▪ Prepare and implement AHA for job task. ▪ Use PPE correctly. ▪ Conduct planning meetings and briefings.

		handling of samples.	▪ Follow all building instructions for sampling. ▪ Utilize all procedures and sampling protocols properly. ▪ Ensure all sampling personnel are in the proper medical surveillance programs. ▪ Ensure all required training has been completed.

ABATEMENT PHASE - ASBESTOS/LEAD			
Major Work Task	**Hazard**	**Cause**	**Preventive Measures**
Perform asbestos and lead abatement and clean up activities.	Exposure to asbestos airborne and surface contamination fibers which are lung hazards. Exposure to lead materials is hazardous to internal organs of the body.	Improper clean up techniques including: Improper tent, decontamination or PPE usage. Improper ventilation usage. Improper waste handling and disposal. Lack of adequate engineering controls. Improper characterization.	▪ Obtain the services of a certified state abatement inspector to plan and supervise the abatement project. ▪ Ensure all workers are trained as asbestos workers. ▪ Ensure all RFETS asbestos/lead prerequisites are met prior to job commencing. ▪ Develop and implement an AHA(s) for the job. ▪ Ensure all medical, training and PPE prerequisites are meet. ▪ Ensure the proper air monitoring sampling is performed during the course of the job by IH&S personnel. ▪ Ensure all posting and clearance sampling is performed. ▪ Ensure that all areas are evaluated and properly characterized by

			SME or competent person.

ABATEMENT PHASE - BE/RADIOLOGICAL			
Major Work Task	**Hazard**	**Cause**	**Preventive Measures**
Perform beryllium decontamination and clean up activities.	Exposure to beryllium contamination in the air or on surfaces is a lung hazard. Improper use of decontamination equipment can cause extremity or limb damage to workers.	Improper clean up techniques including: Improper tent, decontamination or PPE usage. Improper ventilation usage. Improper waste disposal and handling. Improper training in the use of decontamination equipment can injure the user and co-workers. Lack of adequate engineered controls.	▪ Ensure all workers are trained as Be workers. ▪ Ensure all RFETS BE prerequisites are met prior to job commencing. ▪ Develop and implement an AHA(s) for the job. ▪ Ensure all medical, equipment training and PPE prerequisite are met. ▪ Ensure the proper air monitoring sampling is performed during the course of the job by IH&S personnel. ▪ Ensure all posting and clearance sampling is performed.
Perform radiological decontamination operations.	Exposure to radioactive materials internally and externally. Cell damage and damage to internal body organs may occur with over exposures to radioactive materials. Improper use of scrabbling or other decontamination equipment can injure extremities or limbs of workers by causing gash or cutting wounds.	Improper clean up techniques including: Improper tent, decontamination or PPE usage. Improper ventilation usage. Improper waste disposal and handling. No or improper training in the proper use of decontamination equipment.	▪ Ensure all workers are trained as rad workers. ▪ Ensure all RFETS rad prerequisites are met prior to job commencing. ▪ Develop and implement an AHA(s) for the job. ▪ Ensure all

			medical, equipment training and PPE prerequisites are met. ▪ Ensure the proper air and smear monitoring sampling is performed. ▪ Follow the RWP instructions.
DISMANTLEMENT AND DECOMMISSIONING PHASE			
Major Work Task	**Hazard**	**Cause**	**Preventive Measures**
De-energize work areas and remove cables and wiring.	Electrical shock to body, cutting of extremities or body parts using wire strippers or other hand tools, fall off ladder or scaffolding if used.	Lockout/tagout (LO/TO) not used properly, all workers not informed of LO/TO status. Improper use of hand tools, ladders or scaffolding. Improper lighting in room may result in improper use of equipment also. Lack of As-Built drawings.	▪ Utilize LO/TO procedures properly (including verification that energy source has been isolated). ▪ Inspect all hand tools before use. ▪ Ensure all workers are trained in ladder, scaffolding and fall protection measures before using this equipment. ▪ Develop and utilize task specific AHAs. ▪ Perform work area walkdown and conduct proper planning meetings and briefings. ▪ Follow all IWCP instructions. ▪ Ensure all worker training is current.
Move equipment out of rooms or areas and transport utilizing forklifts, pallet jacks, or pick up trucks.	Back injuries, pinching, extremity damage by dropping or falling objects. Internal and external body injuries by vehicle impact. Eye injuries by poking or dust particles in eye. Noise hazards.	Improper lifting techniques, job flow not planned properly, pre-job walkdowns not performed, vehicle alarm systems not working, buddy system not used, lack of attention to detail, worker fatigue, or no use or improper use of PPE.	▪ Perform pre-job walkdowns. ▪ Develop AHAs for job. ▪ Use buddy system. ▪ Ensure vehicle alarm and braking systems are working properly. ▪ Utilize PPE

	Be exposure from contaminated surfaces under equipment.		properly. ▪ Perform proper lifting techniques. ▪ Ensure proper job flow is used and job is not rushed. ▪ Perform pre-job warm up exercises before lifting. ▪ Do not attempt to move items that are stacked too high. ▪ Cover all sharp edges. ▪ Perform beryllium pre-job swipe sampling.
Cut out piping systems in rooms or work areas.	Cutting of body limbs or body parts with mechanical equipment. Piping falling on feet, pinch points of rolling pipe, liquid splashes if piping is not drained, Rebound of pipe can cause body injuries.	Improper use of mechanical equipment including no training of equipment being used, piping not rigged or restrained properly, piping not drained prior to cutting.	▪ Proper training with cutting equipment. ▪ Develop and utilize AHA for job tasks. ▪ Rig and restrain piping properly. ▪ Utilize pipe caps after cutting to keep debris from falling out and cover sharp edges of pipes after cutting. ▪ Ensure piping has been properly taken out of service. ▪ Utilize proper PPE as described in the AHA and RWP.
Hoist, rigging and lifting forklift operation.	Bodily injuries due to falling objects or pinching of workers due to space limitations.	No rigging plan, improper rigging techniques, improper worker body positioning.	▪ Develop rigging plan. ▪ Comply with all RFETS standards for rigging. ▪ Develop AHA and implement. ▪ Perform pre-job walkdown and conduct pre-evolution. ▪ Walkdown rigging path – all phases. ▪ Perform pre and post job inspections on all rigging equipment. ▪ Ensure all workers are properly

			trained. ▪ Follow all required steps in the IWCP.
Packaging waste into containers for storage and shipment. Segregate waste to meet WAC of accepting facility.	Pinching of extremities on container lids, barrels rolling on feet, back strains, foot injuries as vehicle wheels impact or roll onto extremities, cuts/gashes of hands by tooling. Containers must be repackaged.	Improper lifting and handling techniques, wrong tooling used to put lids on containers, pallet jack or forklift ramming into workers, job rushed or not planned properly. Package does not meet WAC.	▪ Use of trained certified waste generator, as appropriate. ▪ Develop AHA and implement. ▪ Review lessons learned from previous waste handling operations. ▪ Develop proper tool list before starting job. ▪ Ensure all waste containers are properly staged before staring job. ▪ Ensure all building notifications are made before moving and handling waste. ▪ Follow appropriate RFETS requirements for waste handling and movement. ▪ Follow all IWCP requirements.
Cut out and remove gloveboxes in rooms or work areas.	Pinch points, foot and hand injuries, cutting of hands/arms, eye and head injuries, burning of skin or extremities. Release of radioactive contamination and inhalation.	Improper use of grinders or no guards on grinders, cramped working conditions, bad lighting, limited vision, breaking of leaded glass, plasma slag burns through clothing, improper use of PPE. Improper use of fixant. Improper use of respirator.	▪ Proper training with cutting equipment. ▪ Develop and utilize AHA for job tasks. ▪ Rig and restrain gloveboxes properly. ▪ Utilize pipe caps on glovebox piping after cutting. ▪ Ensure gloveboxes have been properly taken out of service before work starts. ▪ Utilize proper PPE as described in the AHA. ▪ Perform tooling and respirator inspections before each use. ▪ Follow all IWCP

			requirements.
Construct and utilize scaffolding to perform job tasks.	Fall hazards, workers struck by falling objects, hand injuries.	No use of fall protection, improper training, no use of PPE, improper use of tooling, improper rigging and transport of scaffling pieces, no scaffold inspections, scaffold collapse.	▪ Proper training for scaffold erection and use. ▪ Fall protection and rigging training. ▪ Proper use of PPE. ▪ Develop AHA. ▪ Perform and document scaffolding inspections. ▪ Ensure all scaffolding is tagged properly. ▪ Ensure all toeboards and side rails are in place.
Perform radiological decontamination operations using scrabbling machines, hydrolyzing techniques, hand wiping methods or by applying stripcoat decontamination paint.	Extremity injuries of hand and feet by gouging, cutting or impact. Inhalation, ingestion or skin exposure to radioactive materials and ammonia vapors. Electrocution. Falls.	Improper or no training on equipment used for decontamination, improper work area ventilation, improper use of PPE, no job planning. No LO/TO of work area. No fall protection.	▪ Conduct mock up training on decontamination equipment and stripcoat operations. ▪ Develop AHA for job tasks. ▪ Ensure work area is properly ventilated before applying stripcoat. ▪ Ensure LO/TO operations have been performed. ▪ Wear prescribed PPE as determined by IH&S and Radiological Protection. ▪ Utilize fall protection, when required. ▪ Follow all IWCP, AHA and RWP requirements.
HVAC duct removal.	Pinch points, cutting hands fall from scaffold, release of contamination.	Improper use of cutting equipment. Non-existent or loose guard rail. Improper use of fixant. Improper use of respirator.	▪ Proper training in use of tools and PPE. ▪ Scaffold inspection prior to use. ▪ Developed AHA for job. Training in use of fixant.

Perform final cleanup of building/structure.	Tripping, falls, head wounds, pinch points, punctures, contusions, skin contamination, inhalation, absorption of radioactive materials.	Housekeeping, falling objects, non use of PPE, improper use of PPE, sharp edges or sharp objects not protected, no fall protection, improper ladder use.	▪ Perform weekly housekeeping inspections. ▪ Utilize fall protection, when applicable. ▪ Develop AHA for job task. ▪ Utilize PPE properly and as described by IH&S and Radiological Protection. ▪ Follow all ALARA reviews, AHAs, RWP and IWCP requirements.
Perform final survey of building.	Falls, head wounds, electric shock, abrasions, cuts, pinches.	No fall protection, improper use of instrumentation, working in tight spaces, tripping hazards, bad housekeeping, improper termination of wiring.	▪ Develop AHA. ▪ Perform pre-job walkdowns. ▪ Utilize fall protection when required. ▪ Complete ladder training as required. ▪ Utilize two person rule when working in elevated locations. ▪ Procure confined space permits and training when required. ▪ Follow all AHA and RWP requirements.
Perform demolition activities of building/structure.	Body contusions, head injuries, suffocation, fatalities, and breathing hazards.	Wetting of concrete surfaces not utilized, barriers not used properly, thorough inspections of work area not performed prior to demolition activities, lack of attention to detail.	▪ Develop job AHA. ▪ Perform pre-job walkdowns. ▪ Utilize PPE as prescribed by IH&S. ▪ Maintain wetting of debris with fire houses as demolition occurs.

Example 21

4.06 Prioritization of Systems for Isolation, Shutdown, Stabilization, and Deinventory

The HW Facility DWP and RU distillation systems, REF system, and the TPF system are in a final shutdown mode. The MPF, DWP Final Product Processing, DCF, and portions of the CWW system as well as other process support systems and utilities such as ATM

(Airborne Tritium Monitor), PSTM (stem), ELNH (electricity), IA (instrument air), plant air, domestic water, process raw water, and sewers are operational. Additionally, a vacuum drying process is being utilized to remove the residual moderator held up in the RW Unit distillation towers. The priority of the deinventory of moderator from 400-D is established by AOP milestone SFC19. The priority for completion of system shutdown, stabilization, and deinventory of residual hazards in the 400-D excess facilities is based upon the balance of safety, technical, and programmatic risks associated with the facility in this transition phase.

Priority and allocation of resources for execution of the deactivation plan will be based upon minimizing the remaining hazards and thus minimizing the level of future S&M activities. This will involve the complete shutdown and stabilization of facility process and support systems, as well as the isolation of facility utilities.