

Approved
ORNL WORK PLAN
Operations, Maintenance and Services



Work Plan Name / Rev: 5MW KLYSTRON / 0
Expiration Date: 7/31/2029

| WORK SCOPE/DESCRIPTION | |
|---|---|
| Requester (Name/Badge/Division): | Miner, Timothy / 00707506 / X185 |
| Location of work (Bldg/Rm/Other): | 8330 / / |
| Work Plan Title: | Disassemble 5MW klystron |
| Description of Service/Work Needed: General workplan that covers disassembly of Thales and CETD 5MW klystrons/components involving: Hoisting and Rigging, elevated work, material handling. Prepare/lift lead shielding, klystron, magnet and socket off of tank and into storage containers/stands per manufacturer instructions. | |
| Charge Number, if required: | |
| Work Plan Grade/Worktype: | 4 / 0 |
| Author (Name/Badge): | Miner, Timothy / 00707506 |
| File Attachments: | |
| INSTRUCTIONS | |
| Prerequisites/Precautions: Ensure personnel training is up to date. Ensure all equipment is within inspection. Inspect all equipment prior to use. Ensure area is clear. Ensure all personnel are briefed on potential hazards. PPE. If Riggers/Carpenters are involved they will work under their own work control documentation. | |
| Directions: Airpad klystron under crane. Remove lead shielding panels according to manufacturer instructions. Remove klystron/components according to manufacturer instructions. | |
| Post Work Testing: | |
| Closeout: | |
| JOB HAZARD EVALUATION | |
| HAZARDS | PERMITS / CONTROLS |
| Hoisting and Rigging: Lifting klystron/components | <ul style="list-style-type: none"> ┆ Engage Hoisting and Rigging services for movement of materials (Guideline) [Formerly Use Professional Rigger / Power Equipment Operator for ordinary lift]: Riggers use their own work control documentation ┆ Hard hats: Wear hard hats within boundary ┆ Safety shoes: approved safety shoes ┆ Qualified personnel: ensure training is up to date ┆ Traffic control: barriers or roped off area |
| Elevated Work: Use of Man-lift and ladders | <ul style="list-style-type: none"> ┆ Inspecting Ladders Guide [Step & Fixed]: Inspect ladders prior to use ┆ Obtain Training - Fixed >10 feet; portable >3 feet: insure training is up to date ┆ Aerial Lifts (Boom, Articulating, Telescoping, Scissor, Bucket, etc.): insure within inspection, inspect prior to use, training up to date. |
| Manual Material Handling: Lifting shielding/components, airpad equipment | <ul style="list-style-type: none"> ┆ Apply Guideline: Assess Hazards ┆ Establish Controls (Guideline) [apply 30-50-30 criteria for a non-repetitive lifting task] <ul style="list-style-type: none"> ┆ Reduce weight ┆ Decrease load ┆ Design work area ┆ Facilitate access to material ┆ Optimum environment ┆ Reduce distance /Provide proper storage facilities ┆ Load storage ┆ Eliminate manual lifting/lowering ┆ Eliminate pushing/pulling – Use lifting aids ┆ Other instructions to staff |

- : Use lifting aids, team lift, reduce distance
- | Team Lifting ([Guideline](#)): Team lift as required
- | [Exposure Assessment](#): Enter or attach justification to classify exposure scenario as low risk, qualitative exposure assessment (QEA), or requirement to conduct quantitative exposure monitoring (QEM)

DOCUMENTATION REVIEW AUTHORIZATION
(Approvals are certification of hazards assessment)

| Reviewer/Approver Roles | Signature | Date |
|---|----------------|-----------|
| Accountable Management (Service Provider, Line, Equipment Owner, or Facility Management) | Moss, John | 7/31/2024 |
| Task Leader | Miner, Timothy | 7/31/2024 |
| Work Package Concurrence | | |
| Facility Manager | | |
| Operations Supervisor | | |
| Facility Manager Approval To Start Work | | |
| Facility Manager | | |
| Work Start Authorization | | |
| Task Leader | | |
| Work Acknowledged Complete | | |
| Task Leader | | |
| Worker Feedback: | | |

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| PRE-JOB SAFETY REVIEW GUIDE | | ID: 61591 |
|---|---|------------------|
| Scope of Work: Review work package/plan to ensure all participants understand the work activity. | | |
| Hazards: Review the hazards identified in Job Hazard Evaluation (JHE) / work plan (IOP). ☞ Since the work package / plan was written: 1) Have conditions changed? 2) Are there new hazards? Refer to Field Notes and Focus Areas. | | |
| Hazard Controls / Permits: Review: ☞ Written permits for the work activity. ☞ Precautions, step warnings, Hold Points ... ☞ Personal Protective Equipment (PPE) | ☞ Work instructions for information - e.g., steps where hazards are introduced. ☞ ORNL subject area requirements - e.g., non-permit hazard controls. | |
| Performing Work: ☞ Discuss group/individual responsibilities for safe & effective work. ☞ Follow work instructions & safety procedures. ☞ Availability/location of materials, tools, etc. ☞ Any previous experiences / lessons learned? ☞ Response if work cannot be performed as planned. ☞ What is the worst thing that could happen? ☞ Are there <i>Potential error traps</i> with the job? → → ☞ Take a minute before: work start & leaving work area. ☞ Work Hand-off / Turnover - workers & Task Leader | → Potential Error Traps: ☞ Time pressures ☞ Distractive environment ☞ High workload ☞ First time evolution ☞ First day back ☞ Vague guidance ☞ Over confidence ☞ Imprecise communications ☞ Work stress | |
| Abnormal Situation Response: <u>Stop Work:</u> Observe an unsafe act, activity or condition that creates an imminent danger. <u>Emergency Response:</u> Discuss egress paths or other responses if problems are encountered. | | |
| Field Notes and Focus Areas: (Use this area as a work space to record notes related to new hazards identified in the field or changed conditions. Record feedback in work package/plan information systems.) <div style="height: 150px; border: 1px solid black; margin-top: 5px;"></div> | | |

By signing below, I am indicating that I have been briefed on the potential hazards associated with completing this job.

| Signature / Badge | Date | Signature / Badge | Date |
|-------------------|------|-------------------|------|
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