THE NATION'S URANIUM PROCESSING FACILITY

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REVISION LOG

Revision 4

☒ Intent ☐ Non-Intent Implements PRMS Requirements: ☒ Yes ☐ No

- This revision is a result of a periodic review and addresses issues identified in DPR-Y17-95-64-872
- This revision incorporates the changes identified in and supersedes PRCN-Y17-95-64-872-R03-01
- This revision supersedes PRCN-Y17-95-64-872-R03-02
- The following forms have been obsoleted as a result of this document:
  - CFN-1250, *Daily Tower Crane Inspection Checklist*
  - CFN-1268, *UPF Tower Crane Operations STARRT Card*
  - CFN-1271, *Tower Crane Daily Pre-Use Inspection Checklist*
- Removed Section 3.8, *Tower Crane Operations*, as Tower Cranes are no longer in use
- Other changes include:
  - Updated references and acronyms
  - Editorial changes

Revision 3

☒ Intent ☐ Non-Intent Implements PRMS Requirements: ☒ Yes ☐ No

- Major rewrite, no revision bars used
- An evaluation determination has confirmed that this Command Media implements BNI Quality requirements, as tracked in PRMS

Previous revisions on record

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1.0 INTRODUCTION

1.1 Purpose

This Procedure defines the work process for Crane use and operation at the Uranium Processing Facility (UPF) construction sites and provides direction for the execution, inspection, and documentation of Crane operations.

This document supports the Integrated Safety Management System (ISMS) and defines the standard work process Procedures to be followed at the UPF construction sites when conducting Crane operations under the administrative control of UPF Construction. This ensures the safe and efficient execution of construction lifting activities.

1.2 Scope

NOTE: *While this Procedure does not specifically address certain lifting devices (e.g., hoists, tuggers), it should be utilized as guidance for those items not specifically covered. Also, refer to manufacturer Operations and Maintenance Manuals, applicable standards, and regulations for any requirements (e.g., American Society of Mechanical Engineers (ASME) B30 series Crane standards).*

Applicability to subcontractor employees is as specified in subcontract language.

This Procedure describes the work processes and responsibilities involved with testing, using, and maintaining construction Cranes.

2.0 RESPONSIBILITIES

NOTE: *Assigned roles and responsibilities may be delegated to a designee(s), while the ultimate responsibility will remain with the individuals listed.*

2.1 UPF Site Manager

The Site Manager is ultimately responsible for the safe use and operation of all Cranes in use on the Project.

2.2 UPF Construction Indirects

UPF Construction Indirects is responsible for the following:

- Carrying out daily Equipment Maintenance activities
- Notifying the third-party supplier (i.e., rental company) of required repair work

2.3 UPF Distribs Superintendent

The UPF Distribs Superintendent is responsible for all day-to-day issues regarding UPF construction Cranes.

2.4 Subcontract Technical Representative

The Subcontract Technical Representative (STR) is responsible for the following:

- Overseeing subcontractor activities
- Notifying the subcontractor of required repair work

3.0 PROCESS

3.1 Requirements

3.1.1 Cranes and Rental Cranes

UPF Construction Indirects

- Establish a records file for each Crane. The file shall include but is not limited to the following:
  - Copy of Maintenance Manual/Operating Manual
  - Counterfeit Bolt Certification
  - Initial Inspection
  - Monthly Inspections
  - Annual Inspections Service/Repair Records
  - Test Records
- Maintain copies of monthly/periodic/annual inspections
- Have the third-party equipment service subcontractor establish the Crane within their maintenance tracking system
- Maintain a separate (from the third-party system) tracking system for yearly Crane inspections to ensure third-party subcontractor performs the required annual inspection on each Crane

In accordance with Y17-95-64-851, *UPF Construction Equipment Maintenance*, certain pieces of equipment (e.g., Cranes, derricks, hoists, gantries) must have Occupational Safety and Health Administration (OSHA) inspections at least once a year or whenever the machine has been involved in an accident and sustained major damage. OSHA inspections shall be performed by a qualified individual, and the OSHA Annual Inspection Sticker shall be visible on the equipment.

Distribs Superintendent

- Ensure that daily/monthly/annual inspections are performed when the Crane is in use using CFN-1144, *Mobile Crane Daily/Pre-Use Inspection Checklist* or CFN-1145, *UPF Mobile Crane Initial/Monthly/Periodic Inspection Record*, as applicable
- When a Crane has been idle for more than 30 days, ensure an inspection is performed and documented on CFN-1145 prior to use

3.1.2 Subcontractor-Provided Cranes

The STR shall ensure that all Construction Subcontractors utilizing Cranes for work activities have adequate procedures and Qualified Personnel in place to perform all inspections, maintenance, and tests required by this Procedure.

3.2 Inbound Inspection

Upon arrival of a rental Crane at the site, an inbound inspection must be conducted by UPF Construction Indirects and an equipment owner's representative, using CFN-1145. Any discrepancies found during the inspection that requires recertification before use shall be corrected according to a plan of action agreed upon by the equipment owner's representative and the UPF Construction Indirects. A re-inspection or testing may be required depending on extent of the repair.

3.3 Crane Assembly/Disassembly

Where Crane Assembly/Disassembly (A/D) is required, the operation shall be under the control and direction of the subcontractor with oversight provided by the STR or a third-party supplier with oversight provided by UPF Construction Indirects.

3.4 Post-Assembly Inspection

Upon completion of assembly, the equipment must be inspected by a Qualified Person (i.e., vendor) to ensure that it is configured in accordance with manufacturer equipment criteria using CFN-1145.

3.5 Testing

3.5.1 Functional testing (including Load Testing) is required as part of the Commissioning process for a Crane. The testing requirements must be established by a Project Rigging Engineer in accordance with applicable standards and codes.

3.5.2 Upon completion of the initial inspection and Load Test, documentation shall be recorded and filed in the equipment file.

3.6 Ground Preparation

3.6.1 Before engaging in any Crane operations at the site, it is necessary to ensure that the supporting surface is adequately prepared, suitably leveled and compacted, and of adequate stiffness to ensure that, in conjunction with mats or other load-spreading materials (where required), the Crane remains within permitted level and is properly supported. This includes the need to identify voids and underground services.

3.6.2 If UPF Construction engages a subcontractor to perform lifting operations on its behalf, then ensure that the following activities are performed:

- The ground is graded and the conditions (slope, compaction, and firmness) are satisfactory. If necessary, blocking, mats, cribbing, or similar supporting materials or devices should be used to ensure that the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met

- Inform the user of the equipment and the operator of the location of all known hazards beneath the equipment set-up area (e.g., voids, tanks, utilities)

3.6.3 The subcontractor is responsible for:

- Requesting information regarding existing ground conditions, ground preparation, and known underground hazards
- Providing a suitable matting or other load-spreading arrangement capable of:
  - Distributing Crane support loads/pressures at pressures within the capability of the supporting surface
  - Providing adequate stiffness so that, in conjunction with the ground preparation provided, the Crane is maintained within permissible level limits during operation

In the event that the subcontractor's A/D Director or operator determines that ground conditions do not meet the requirements outlined previously, the subcontractor's A/D Director shall meet with UPF Construction representatives to discuss how the ground preparations may be improved to the required standards.

3.7 Daily Operations & Maintenance

3.7.1 Cranes shall be operated only by a Qualified Crane Operator (QCO) in accordance with Y17-95-64-871, *UPF Construction Hoisting and Rigging Work Operations,* which defines safe operation, hazard identification, and briefings. Approved operator trainees may operate Cranes on non-critical lifts under the direct supervision of a designated qualified operator. Inspectors and maintenance personnel who are QCOs (and who are approved to operate the specific class of machine) may operate a Crane strictly for those functions required to perform their inspection or maintenance duties.

3.7.2 The Crane operator shall perform a daily inspection of the Crane and record the results on CFN-1144 or similar equipment daily checklist and safety inspection form. The Crane operator shall also ensure that monthly and/or annual inspections are performed using CFN-1145, when scheduled.

3.7.3 Capacity charts should be present on Cranes, and the manufacturer's technical information should be included in operator's manuals (as applicable).

3.7.4 The results of the daily, monthly, and/or yearly inspections determine whether the Crane is safe to use. If the operator detects equipment concerns that need to be resolved before performing a lift, then the operator shall contact supervision and the Distribs Superintendent to resolve the concerns.

3.7.5 If repairs are done to any load-bearing parts, then a Load Test shall be performed.

3.7.6 Upon completion of repairs and required Load Tests, the operator shall verify Crane readiness by completing CFN-1144.

3.8 Demobilization

Demobilization of Cranes shall be conducted in accordance with Y17-95-64-851.

3.9 Outbound Inspection

3.9.1 The outbound inspection of a rental Crane shall be conducted by UPF Construction Indirects, in accordance with Y17-95-64-851.

4.0 RECORDS

Records generated by this Document shall be maintained in accordance with Y15-95-800, *UPF Document Management*.

The following records are generated:

Record or Form Number	Record Title	System/ Location	Document Type
CFN-1144	*Mobile Crane Daily/Pre-Use Inspection Checklist*	InfoWorks	MCIC
CFN-1145	*UPF Mobile Crane Initial/Monthly/Periodic Inspection Record*	InfoWorks	MCIR

5.0 REFERENCES

5.1 Source References

29 CFR 1926, Subpart CC, *Cranes and Derricks in Construction*

ASME B30.1, *Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries*

ASME B30.2, *Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)*

ASME B30.22, *Articulating Boom Cranes*

ASME B30.24, *Container Cranes*

ASME B30.6, *Derricks*

ASME B30.9, *Slings*

PL-CM-801768-A001*, Construction Management Plan and Execution Strategy*

PL-QA-801768-A001, *Bechtel National Incorporated (BNI) Uranium Processing Facility (UPF) Project Quality Assurance Plan (QAP)*

SWPP 4MP-T81-01904, *Cranes Use and Operation*

UPF-CP-203*, Dropped Object Prevention*

Y15-95-200, *UPF Graded Approach to Quality*

Y15-95-800PD, *UPF Document Control and Records Management Program Description*

Y17-95-64-838, *UPF Management of Construction Equipment*

Y17-95-64-850, *UPF Control of Measuring and Test Equipment*

Y60-95-102PD, *UPF Quality Assurance Program Description*

5.2 Interfacing References

Y15-95-800, *UPF Document Management*

Y17-95-64-851, *UPF Construction Equipment Maintenance*

Y17-95-64-871, *UPF Construction Hoisting and Rigging Work Operations*

Y17-95-64-873, *UPF Qualification of Construction Crane Operators*

5.3 Forms

CFN-1144, *Mobile Crane Daily/Pre-Use Inspection Checklist*

CFN-1145*, UPF Mobile Crane Initial/Monthly/Periodic Inspection Record*

6.0 SUPPLEMENTAL INFORMATION

Appendix A, *Acronyms and Definitions*

APPENDIX A
Acronyms and Definitions

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Acronyms

A/D - Assembly/Disassembly	6
ASME - American Society of Mechanical Engineers	4
ISMS - Integrated Safety Management System	4
OSHA - Occupational Safety and Health Administration	5
QCO - Qualified Crane Operator	7
STR - Subcontract Technical Representative	5
UPF - Uranium Processing Facility	4

Definitions

Commissioning	The process of functional testing of a Crane after assembly and bringing it to an operating condition.
Cranes	For the purposes of this Procedure, “Crane” is considered to be any lifting machine in one of the following categories: • Hydraulic truck-mounted Cranes, including Rough Terrain and All-Terrain Cranes and Boom Trucks • Friction and hydraulic drive Lattice Boom Truck-mounted Cranes • Friction and hydraulic drive Lattice Boom Crawler Cranes • Ringer Cranes (over 350 tons) • Heavy crawler Cranes (over 350 tons) • Heavy mobile truck Cranes (over 350 tons) • Cranes using Superlift or other similar capacity-enhancing devices • Custom Cranes (i.e., Lampson Transi-Lift® and Mammoet MSG/PTC) • Derricks (stiff-leg and guyed) • Gin Poles • Strand jack systems (used with or without towers) • Jacking mast systems (push-up or climbing type) • Lattice lifting gantries (fixed or mobile) • Telescoping hydraulic lifting gantries (mobile or fixed) • Bridge Cranes and Overhead Cranes • Boom Trucks • Duty Cycle Cranes (Clamshell/Dragline) • Crane fitted with pile-driving equipment

APPENDIX A
Acronyms and Definitions

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Designated Person	An individual selected or assigned by UPF Construction management or a subcontractor as being competent to perform specific duties.
Equipment Maintenance	The process by which equipment is kept in optimal, safe-working condition.
Function Tests	A test or series of tests to validate that an operating function or functions is/are performing as intended. • May be devised to test a specific function or to test the machine as a whole • May be specified by procedure following initial manufacture, assembly, repair, adjustment, or simply as validation of correct operation prior to use
Load Test	A test to validate the ability of the lifting equipment to withstand a known load safely: • May not be required to be conducted at full-Rated Capacity, but possibly at a load sufficient to validate the equipment safely for the actual load to be lifted
Mobilization	The process of arranging transportation of the lifting equipment to the project and the assembly upon arrival at the project.
Periodic Inspection (s)	A formally recorded, thorough inspection of the condition of equipment conducted by a designated person in accordance with a written program of examination at intervals not exceeding those specified by applicable legislation.
Qualified Crane Operator (QCO)	Any project or subcontractor (as applicable) employee qualified to operate a Crane under Y17-95-64-873, *UPF Qualification of Construction Crane Operators*.
Qualified Person	A person who—by possession of a recognized degree or certificate of professional standing; or by extensive knowledge, training, and experience—has successfully demonstrated the ability to address or resolve problems related to the subject matter and work.
Qualified Rigger	A rigger who meets the criteria for a Qualified Person.
Rated Capacity	The maximum load that the manufacturer determines may be safely suspended from the Crane's boom or jib head. This varies by Crane configuration and operating radius; Crane ratings are published in the applicable Crane chart. It is necessary to read carefully in order to comprehend fully what the manufacturer includes and excludes in the ratings.
Record Keeping	The following records and documents shall be retained in the project files: a. Documentation of required Crane inspections and Load Tests b. Service records indicating maintenance and repairs performed at the job site c. Crane safety bulletins and topics of discussion related to Crane operation d. Operation and maintenance manuals that must be made available to the Crane operator and maintenance team e. Incident reports related to Crane operation