THE NATION'S URANIUM PROCESSING FACILITY

UPF PAGE/PROCEDURE CHANGE NOTICE (PRCN)

PRCN Number:	PRCN-Y17-95-64-872-R03-02	PRCN Rev:	0	Effective Date:	11/11/2020

NOTE: PRCN Effective Date cannot precede effective date of associated document.

Associated Document Number:	Y17-95-64-872	Rev:	3

Associated Document Title: *UPF Crane Use and Operation*

Identify the scope of the change, including any new, removed, or changed content. Notate any references, such as Condition Reports, that are driving the change

This PRCN will add the use of CFN-1271, *Tower Crane Daily Pre-Use Inspection Checklist,* to Section 3.8.2 and add CFN-1271 to Section 4.0.

From:

Section 3.8.2

Tower crane operators shall perform shiftly inspections and document findings using CFN-1250, *Daily Tower Crane Inspection Checklist*.

To:

Section 3.8.2

Tower crane operators shall perform shiftly inspections and document findings using CFN-1250, *Daily Tower Crane Inspection Checklist,* and CNF-1271, *Tower Crane Daily Pre-Use Inspection Checklist*.

Implements Quality Requirements (Select One)			
☐ None	☒ BNI	☐ CNS	☐ BNI & CNS

Preparer			
UPF Construction Issues Management – Procedure Compliance:	Tammy D. Threat		11/03/20
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Approval			
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This document has been reviewed by a Y-12 DC / UCNI-RO and has been determined to be UNCLASSIFIED and contains no UCNI. This review does not constitute clearance for Public Release.

Name: A. L. Glover Date: 11/11/20

A. L. Glover

RC-UPF DMC
11/11/20 13:08

THE NATION'S URANIUM PROCESSING FACILITY

UPF PAGE/PROCEDURE CHANGE NOTICE (PRCN)

PRCN Number: PRCN-Y17-95-64-872-R03-02	PRCN Rev: 0

From:

Section 4.0 Records

Record Number	Record Title	Record Holder	System/Location	Quality Type
CFN-1144	Mobile Crane Daily/Pre-Use Inspection Checklist	UPF DMC	InfoWorks	QA-NP
CFN-1145	UPF Mobile Crane Initial/Monthly/Periodic Inspection Record	UPF DMC	InfoWorks	QA-NP
CFN-1250	Daily Tower Crane Inspection Checklist	UPF Construction	N/A	Non-QA

To:

Section 4.0 Records

Record Number	Record Title	Record Holder	System/Location	Document Type	Quality Type
CFN-1144	Mobile Crane Daily/Pre-Use Inspection Checklist	UPF Construction	N/A	MCIC	Non-QA
CFN-1145	UPF Mobile Crane Initial/Monthly/Periodic Inspection Record	UPF DMC	InfoWorks	MCIR	QA-NP
CFN-1250	Daily Tower Crane Inspection Checklist	UPF Construction	N/A	N/A	Non-QA
CFN-1271	Tower Crane Daily Pre-Use Inspection Checklist	UPF Construction	N/A	N/A	Non-QA

THE NATION'S URANIUM PROCESSING FACILITY

UPF CHANGE NOTICE (PCN) FORM

PCN Number:	PRCN-Y17-95-64-872-R03-01	PCN Rev: 0	Effective Date: 01/30/2020
Associated Document Number:	Y17-95-64-872		Rev: 3
Associated Document Title:	UPF Crane Use and Operation		

Identify the scope of the change, including any new, removed, or changed content. Include any references, such as Condition Reports that are driving the change:

Section 4.0 RECORDS

Change From:

Record Number	Record Title	Record Holder	System/Location	Quality Type
CFN-1144	Mobile Crane Daily/Pre-Use Inspection Checklist	UPF DMC	InfoWorks	QA-NP
CFN-1145	UPF Mobile Crane Initial/Monthly/Periodic Inspection Record	UPF DMC	InfoWorks	QA-NP
CFN-1250	Daily Tower Crane Inspection Checklist	UPF Construction	N/A	Non-QA

Change To:

Record Number	Record Title	Record Holder	System/Location	Quality Type
CFN-1144	Mobile Crane Daily/Pre-Use Inspection Checklist	UPF Construction	N/A	Non-QA
CFN-1145	UPF Mobile Crane Initial/Monthly/Periodic Inspection Record	UPF DMC	InfoWorks	QA-NP
CFN-1250	Daily Tower Crane Inspection Checklist	UPF Construction	N/A	Non-QA

Implements Quality Requirements			
☐ None	☒ BNI	☐ CNS	☐ BNI & CNS

Preparer			
UPF Construction Issues Management – Procedure Compliance:	Tammy Threat		01/15/20
	Printed Name/Signature		Date

Approval			
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UPF Site Manager:	Dave Ross		01/27/20
	Printed Name/Signature		Date

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Name: _____ Date: 01/28/20

RC-UPF DMC
01/30/20 12:02

THE NATION'S URANIUM PROCESSING FACILITY

Preparer:

Devon K. Engle — 05/02/19
Issues Management Coordinator — Date

Approval:

Brian Tevis — 05/06/19
UPF Construction Distribs Manager — Date

Michael M. Martinez — 05/07/19
UPF Project Field Engineer — Date

Dave Ross — 05/09/19
UPF Site Manager — Date

05/10/19
Effective Date

Implements Quality Requirements

☐None ☒BNI ☐CNS ☐BNI & CNS

RC-UPF DMC
05/10/19 06:45

This document has been reviewed by a Y-12 DC / UCNI-RO and has been determined to be UNCLASSIFIED and contains no UCNI. This review does not constitute clearance for Public Release.
Name: Steven A. Buffalo Date: 05/10/19

REVISION LOG

Revision	Description	Intent	Non Intent
3	Major rewrite, no revision bars used An evaluation determination has confirmed that this Command Media implements BNI Quality requirements, as tracked in PRMS.	X	
2	Revised to flow down requirements from SWPP 4MP-T81-01904, *Cranes Use and Operations* for alignment Added Appendix B on Crane Load Test Responsive to the following Condition Reports: 25774-000-GCA-GAM-01007, *Near Miss – Box of Plastic Forks Dropped from East Tower Crane (IEN 2018-404)* 25774-000-GCA-GAM-01071, *Near Miss – Plastic Bottles Fall from Tower Crane (IEN 2018-458)* An evaluation determination has confirmed that this Command Media implements BNI Quality requirements, as tracked in PRMS.	X	
Previous revisions	On record	N/A	

CONTENTS

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 Description

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., 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

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

2.1 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 WORK PROCESS

3.1 Requirements

3.1.1 Tower 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 that the 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 that an inspection is performed and documented on a 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. 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 the 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.

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). 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 Tower Crane Operations

3.8.1 Implement the Safety Task Analysis and Risk Reduction Talk (STARRT) Card process defined in Y17-95-64-823, *UPF Safety Task Analysis and Risk Reduction Talk/Job Hazard Analysis Program (STARRT/JHA) Process* using CFN-1268, *UPF Tower Crane Operations STARRT Card.*

3.8.2 Tower crane operators shall perform shiftly inspections and document findings using CFN-1250, *Daily Tower Crane Inspection Checklist*.

3.9 Demobilization

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

3.10 Outbound Inspection

3.10.1 The outbound inspection of a rental crane shall be conducted by UPF Construction Indirects.

4.0 RECORDS

Records generated by this procedure shall be maintained in accordance with Y15-95-800, *UPF Document Management*. Record types for documents submitted to the UPF Document Management Center (DMC) are identified in ML-PS-801768-A001, *Uranium Processing Facility Project Master Document Type List*. Quality Type is listed as Quality-Lifetime (QA-L), Quality-Nonpermanent (QA-NP), or Non-Quality (Non-QA).

Records generated during the performance of this procedure include:

Record Number	Record Title	Record Holder	System/ Location	Quality Type
CFN-1144	*Mobile Crane Daily/Pre-Use Inspection Checklist*	UPF DMC	InfoWorks	QA-NP
CFN-1145	*UPF Mobile Crane Initial/Monthly/ Periodic Inspection Record*	UPF DMC	InfoWorks	QA-NP
CFN-1250	*Daily Tower Crane Inspection Checklist*	UPF Construction	N/A	Non-QA

5.0 REFERENCES

5.1 Source References

ASME B30.1, *Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries: Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings*

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 B30.3, *Tower Cranes: Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings*

ASME B30.5, *Mobile and Locomotive Cranes*

ASME B30.6, *Derricks—Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings*

ASME B30.9, *Slings*

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

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

PL-PJ-801768-A001, *Document Control and Records Management Plan for the Uranium Processing Facility Project*

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

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

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

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*

Y73-95-100, *UPF Dropped Object Prevention*

5.2 Interfacing References

CFN-1268, *UPF Tower Crane Operations STARRT Card*

ML-PS-801768-A001, *Uranium Processing Facility Project Master Document Type List*

Y15-95-800, *UPF Document Management*

Y17-95-64-823, *UPF Safety Task Analysis and Risk Reduction Talk/Job Hazard Analysis Program (STARRT/JHA) Process*

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

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

6.0 SUPPLEMENTAL INFORMATION

Appendix A, *Acronyms and Definitions*

APPENDIX A
Acronyms and Definitions

(Page 1 of 3)

ACRONYMS:

A/D	Assembly/Disassembly
DMC	Document Management Center
ISMS	Integrated Safety Management System
OSHA	Occupational Safety and Health Administration
QCO	Qualified Crane Operator
STR	Subcontract Technical Representative
UPF	Uranium Processing Facility

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 (such as 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) • Tower Cranes (all types) • Bridge Cranes and Overhead Cranes • Boom Trucks • Duty Cycle Cranes (Clamshell/Dragline) • Crane fitted with pile-driving equipment
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.

APPENDIX A
Acronyms and Definitions

(Page 2 of 3)

Full-Rated Load Test	A load test to validate the maximum capacity for which equipment is rated. • Includes (typically) minimum boom, minimum radius, maximum counterweight, maximum outrigger/crawler spread, and possibly maximum Superlift radius and ballast (where fitted) • Depending on context, a Full-Rated Load Test may imply a series of tests to validate the crane over its entire range of configurations, radii, and capacities.
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 Rating Charts	Load Rating Charts are to include, as a minimum: • A full and complete range of crane load ratings at all stated operating radii, boom (jib) lengths, hoist line reevings, counterweight arrangements, or other configuration variables • Precautionary or warning notes relative to limitations on equipment and operating procedures • Maximum permissible operating wind speed • Notes on capacity deductions to be taken Durable and legible Load Rating Charts specific to that machine are to be kept in the crane cab at all times.
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.
Operator Screening and Qualification	The process of approving crane operators to work on a project site as described in Y17-95-64-873.
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.
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.

APPENDIX A
Acronyms and Definitions

(Page 3 of 3)

Rated Load Test	A load test conducted to validate the rated capacity of the lifting equipment in a particular configuration. • The total test load (including block, rigging, etc.) should be as close as possible to 100% of the rated load of the equipment as configured (and, in the case of a crane, at a specific radius corresponding to that rated load). • If it is required to validate the capacities of a crane in a specific configuration over its operating range of radii, it will be necessary to conduct two tests, one at minimum radius and a second at maximum radius. The test loads will be different and will equate to the chart capacities at minimum and maximum radius. If an overload test is required, the manufacturer must be consulted and must approve in writing.
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
Safety/Operational Aids	Accessories that provide information to facilitate operation of a crane or that take control of functions of the crane when a limiting condition is sensed. Examples include but are not limited to: anti-two block device, rated capacity indicator, load limiter, boom angle or radius indicator, LMIs, and electronic crane management systems.