THE NATION'S URANIUM PROCESSING FACILITY

UPF PAGE/PROCEDURE CHANGE NOTICE (PRCN)

PRCN Number:	PRCN-Y17-95-64-899-R00-02	Effective Date:	03/31/2023

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

☒ Intent Change ☐ Non-Intent Change

Associated Document Number:	Y17-95-64-899	Rev:	0
Associated Document Title:	UPF Bull Rigging Operations		
Justification for Change:	This PRCN is in response to Condition Report 25774-000-GCA-GAM-03941, *CNS Concerns with BNI Compliance with Records Identification and Retention Requirements (CNS letter 25774-22-CNS-017) [*CA]*		

Identify the scope of the change, including mark-up (i.e., strike-through for deletions, colored text for additions) of any new, removed, or changed content.

Section 3.4.2, *Bull Rigging Requirements*

FROM:

Critical Risk Bull Rigging Operations

- The BR PIC will complete a Bull Rigging Plan (example provided in Attachment 2, Bull Rigging Plan [Sample]). This plan shall be supplemented by a relevant sketch of load-handling methods for the task and any other information required to adequately explain the intent.

TO:

Critical Risk Bull Rigging Operations

- The BR PIC will complete a Bull Rigging Plan ~~(example provided in **Attachment 2, *Bull Rigging Plan [Sample]***)~~. *(refer to CFN-1352, Bull Rigging Plan)* This plan shall be supplemented by a relevant sketch of load-handling methods for the task and any other information required to adequately explain the intent.

Section 4.0, *Records*

FROM:
None

TO:

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

The following records generated are:

Record or Form Number	Record Title	System/ Location	Document Type
CFN-1352	*Bull Rigging Plan*	InfoWorks	BRP

RC-UPF DMC
03/31/23 09:18

THE NATION'S URANIUM PROCESSING FACILITY

UPF PAGE/PROCEDURE CHANGE NOTICE (PRCN)

Section 5.1, *Source References*

FROM:

29 CFR Part 1926, *Subpart CC – Cranes and Derricks in Construction*
ASME B30.1, *Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries*
ASME B30.20, *Below-the-Hook Lifting Devices*
ASME B30.23, *Personnel Lifting Systems*
ASME B30.26, *Rigging Hardware*
ASME B30.5, *Mobile and Locomotive Cranes*
ASME B30.6, *Derricks*
ASME B30.9, *Slings*
ASME Design Standard BTH-1 2008, *Design of Below-the-Hook Lifting Devices*
Bechtel Crane Foundation Handbook
Bechtel Rigging Handbook
~~ML-PS-801768-A001, *Uranium Processing Facility Project Master Document Type List*~~
OSHA Regulation – 29 CFR Part 1926, Subpart H, 1926.251, *Rigging Equipment for Material Handling*
Specialized Carriers & Rigging Association Manual/Bull Rigging Competency Guidebook
UPF-CP-219, *Suspended Personnel Platforms*
UPF-MANUAL-CM-001, *Uranium Processing Facility Construction Electrical Safety Manual*
Y15-95-800, *UPF Document Management*
Y15-95-813, *UPF Control of Suspect/Counterfeit Items*
Y17-95-64-871, *UPF Construction Hoisting and Rigging Work Operations*
Y17-95-64-872, *UPF Cranes Use and Operation*
Y17-95-64-873, *UPF Qualification of Construction Crane Operators*
Y90-95-027, *UPF Training Program*

TO:

29 CFR Part 1926, Subpart CC – Cranes and Derricks in Construction
ASME B30.1, Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries
ASME B30.20, Below-the-Hook Lifting Devices
ASME B30.23, Personnel Lifting Systems
ASME B30.26, Rigging Hardware
ASME B30.5, Mobile and Locomotive Cranes
ASME B30.6, Derricks
ASME B30.9, Slings
ASME Design Standard BTH-1 2008, Design of Below-the-Hook Lifting Devices
Bechtel Crane Foundation Handbook
Bechtel Rigging Handbook
ML-PS-801768-A004, *Uranium Processing Facility Project Records Retention and Turnover List*
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UPF-CP-219, *Suspended Personnel Platforms*
UPF-MANUAL-CM-001, *Uranium Processing Facility Construction Electrical Safety Manual*
~~Y15-95-800, *UPF Document Management*~~
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Y17-95-64-871, *UPF Construction Hoisting and Rigging Work Operations*
Y17-95-64-872, *UPF Cranes Use and Operation*
Y17-95-64-873, *UPF Qualification of Construction Crane Operators*
Y90-95-027, *UPF Training Program*

THE NATION'S URANIUM PROCESSING FACILITY

UPF PAGE/PROCEDURE CHANGE NOTICE (PRCN)

Section 5.2, *Interfacing References*

FROM:
OSHA Regulation – 29 CFR Part 1926, Subpart R, *Steel Erection*
Y17-95-64-823, *UPF Safety Task Analysis and Risk Reduction Talk/Job Hazard Analysis Program (STARRT/JHA) Process*
Y17-95-64-874, *UPF Rigger, Signal Person, and Competent Person Rigger Qualification*
Y17-95-64-875, *UPF Control of Hoisting and Rigging Equipment*
Y17-95-64-900, *UPF Bull Rigger Qualifications*

TO:
OSHA Regulation – 29 CFR Part 1926, Subpart R, *Steel Erection*
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*
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Y17-95-64-875, *UPF Control of Hoisting and Rigging Equipment*
Y17-95-64-900, *UPF Bull Rigger Qualifications*

ATTACHMENT 2
Delete this Attachment and renumber subsequent Attachments
Created new UPF form CFN-1352

Preparer			
UPF Construction Issues Management	Kellie R. Coleman		03/28/23
	Printed Name/Signature		Date
Approval			
UPF Project Field Engineer	Bradley A. Lewis		03/29/23
	Printed Name/Signature		Date
UPF Site Manager	Gary J. Cough		03/28/2023
	Printed Name/Signature		Date
UPF Project Manager	Sujal H. Lagowala		03/28/23
	Printed Name/Signature		Date

THE NATION'S URANIUM PROCESSING FACILITY

UPF PAGE/PROCEDURE CHANGE NOTICE (PRCN)

PRCN Number:	PRCN-Y17-95-64-899-R00-01	PRCN Rev:	0	Effective Date:	09/13/2022

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

☒ PRCN Eligible Intent Change ☐ Non-Intent Change

Associated Document Number:	Y17-95-64-899	Rev:	0

Associated Document Title: *UPF Bull Rigging Work Operations*

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 change is in response to CR:25774-000-GCA-GAM-03850, Action 1, Review Y17-95-64-899, *UPF Bull Rigging Operations*, with regards to a Craft (Union) environment

In section 2.4, Rigging Supervisor, make the following changes:

- Delete existing note: *"The RS should be qualified to be the BR PIC, as they may serve in this capacity for all categories of load-handling operations."*
- Delete first bullet: Maintaining a register of qualified BR PICs.
- Add new note:
  NOTE: *The Rigging Supervisor at UPF is typically the Responsible Discipline Superintendent in charge of the work. Rigging Supervisor Duties may be delegated as applicable to a Bull Rigging Qualified General Foreman. The Rigging Supervisor is encouraged to coordinate with and work with the Project Rigging Superintendent for the responsibilities above.*

Preparer			
UPF Issues Management Coordinator:	Mark W Murdock	Mark W Murdock	09/12/22
	Printed Name/Signature		Date
Approval			
UPF Project Field Engineer:	Bradley A. Lewis		09/12/22
	Printed Name/Signature		Date
UPF Site Manager:	Robert S. Solberg		09/12/22
	Printed Name/Signature		Date
UPF Project Manager:	Michael S. Robinson		09/13/22
	Printed Name/Signature		Date

RC-UPF DMC
09/13/22 14:00

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: 09/13/22

THE NATION'S URANIUM PROCESSING FACILITY

Preparer:

Tammy D. Threat
UPF Construction Issues Management Procedure
Compliance Lead
07/15/20
Date

Approval:

Bryan C. Leber
UPF Project Field Engineer
07/18/20
Date

W. Dave Ross
UPF Site Manager
07/20/20
Date

Michael S. Robinson
UPF Project Manager
07/20/20
Date

10/19/2020
Effective Date

RC-UPF DMC
07/23/20 13:46

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: 07/21/20

Implements Quality Requirements

☐ None ☒ BNI ☐ CNS ☐ BNI and CNS

REVISION LOG

Revision 0	☒ Major intent ☐ Minor intent ☐ Non-intent

- Initial Issue
- An evaluation determination has been performed confirming that this Command Media implements BNI quality requirements as tracked in the Programmatic Requirements Management System (PRMS).

CONTENTS

1.0 INTRODUCTION

1.1 Purpose

This procedure defines the work process for Construction Bull Rigging hoisting/rigging work operations activities on the Uranium Processing Facility (UPF) construction sites.

1.2 Scope

This procedure is applicable to UPF/Bechtel National, Inc. (BNI) Construction Bull Rigging work operations performed by UPF Construction entities, whether self-performed or subcontractor-performed.

Applicability to subcontractor employees is as specified in subcontract language.

Compliance provides a framework for managing construction rigging operations (including lifting and moving) that is, at minimum, compatible with United States Occupational Safety and Health Administration (OSHA) regulations and the American Society of Mechanical Engineers (ASME) industry codes. This procedure does not take precedence over any statutory regulations applying to the jobsite.

This procedure does not apply to work activities involving the use of gin wheels, pipe dollies, pallet jacks, floor and engine hoists, jack stands, and overhead and floor-mounted davit arm/jib cranes; however, an industry best practice is to involve the Project's Rigging Superintendent, in conjunction with the Rigging Engineer where necessary, to determine the work activities that are included in and excluded from the scope of this procedure.

2.0 RESPONSIBILITIES

2.1 Site Manager

The Site Manager is responsible for ensuring that the requirements of this procedure are properly implemented. Additionally, the Site Manager, in conjunction with the Project Field Superintendent (PFS) and Project Field Engineer (PFE), will ensure the roles and responsibilities defined in this section are delegated and assigned within the Project organization.

2.2 Project Field Superintendent

The PFS is responsible for:

- Planning and directing all project work operations.
- Ensuring Bull Rigging operations are planned and executed in accordance with the requirements of this procedure.

2.3 Project Field Engineer

The PFE is responsible for ensuring that the requirements of this procedure are properly implemented.

2.4 Rigging Supervisor

The Rigging Supervisor (RS) is responsible for:

- Planning and directing Project work operations.
- Ensuring Bull Rigging operations are planned and executed in accordance with the requirements of this procedure.
- Determining the classification of a Bull Rigging operation as either a general risk operation or a critical risk operation with the assistance of a Rigging Engineer where required.
- Managing rigging assets onsite.
- Scheduling resources, coordination, and supervision of Bull Rigging and load-handling activities.
- Appointing the Bull Rigging Person in Charge (BR PIC)

NOTE: *The Rigging Supervisor at UPF is typically the Responsible Discipline Superintendent in charge of the work. Rigging Supervisor Duties may be delegated as applicable to a Bull Rigging Qualified General Foreman. The Rigging Supervisor is encouraged to coordinate with and work with the Project Rigging Superintendent for the responsibilities above.*

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- Ensuring bull riggers, signal persons, riggers, Competent Person Riggers (CPRs), and crane operators are trained, qualified, and/or certified as required by statute and Bechtel procedures.

2.5 Bull Rigging Person in Charge

The BR PIC is responsible for:

- Planning and executing a Bull Rigging operation.
- Safely executing work.
- With the RS, determining the classification of a Bull Rigging operation as either a general risk operation or a critical risk operation with the assistance of a Rigging Engineer where required.
- Developing and reviewing Bull Rigging plans where required by the complexity of the lift and/or by UPF procedures.
- Selecting suitable lifting equipment and rigging hardware where not specified by a written plan.
- Inspecting the equipment before use and ensuring it is current with regulatory and UPF's certification requirements.
- Ensuring rigging is configured correctly and is properly attached to the lifting equipment.
- Ensuring Bull Rigging team members are properly qualified for their task; this includes ensuring that they are trained, competent, and aware of their responsibilities, and are complying with all applicable standards, requirements, and safe practices.
- Verifying ground conditions, wind speeds, and other requirements are as stipulated and within acceptable parameters.
- Directing the execution of a Bull Rigging activity in accordance with the plan.

- Complying with applicable UPF procedures, OSHA standards, and federal, state, county, and local regulations, as well as customer and Project-specific requirements.

NOTE: *The most stringent requirement governs; in the case of conflict, seek advice—statutory requirements take precedence.*

- Participating in the Job Hazard Analysis (JHA) and the signing of the Safety Task Analysis and Risk Reduction Talk (STARRT) cards for rigging activities.
- Briefing the participants prior to a load-handling activity regarding the plan, the hazards present, and the control measures in place to manage risk.

2.6 Bull Rigging Team Members

The Bull Rigging Team Members are responsible for:

- Complying with the perquisites and direction provided by the BR PIC for execution of the Bull Rigging operation.
- Participating in pre-job activity and safety planning processes, including JHA development and review, STARRT card meeting, and pre-lift briefing.
- Complying with stop work orders, and exercising stop work authority when they believe a situation has developed that places personnel or property at risk of injury or damage.
- Participating and communicating during execution of the Bull Rigging operation.

2.7 Project Environmental, Safety, and Health Representative

The Project Environmental, Safety, and Health (ES&H) Representative is responsible for:

- Participating in work planning and providing input on work control requirement through the STARRT/JHA process.
- Providing ES&H coverage for General and Critical Bull Rigging activities and performing walkdowns, as required.

3.0 REQUIREMENTS

3.1 General

- The Bull Rigging Process Flowchart is shown in **Appendix B, *Bull Rigging Process Flowchart***.
- When the scope of this procedure is performed (in full or in part) by subcontractors, the PFE ensures the minimum control activities are assigned to the responsible entities and documented on a Multi-Entity Process Division of Responsibility (DOR) (example shown in **Attachment 1*, Multi-Entity Work Process DOR***).

3.2 Provision of Properly Trained and Competent Personnel

3.2.1 Persons involved in planning and executing Bull Rigging work operations on construction projects shall be trained and qualified to perform their assigned tasks in accordance with Y17-95-64-900, *UPF Bull Rigger Qualifications*.

NOTE: *Refer to Y17-95-64-900 for training requirements.*

3.3 Safe Systems of Work

The RS ensures a safe system of work is implemented for all load-handling operations on the Project. The safe system of work includes the following components:

- Skilled planning (including risk reduction and control measures to mitigate hazards).
- The provision of properly trained, qualified, and competent personnel who have been made aware of their relevant authorities and responsibilities.
- Engagement of the participants in the plan and its execution, as well as effective monitoring.
- Selection, provision, and use of suitable lifting and hauling equipment that is well-maintained, inspected, tested, and is operated safely within load capacity.
- Operational procedures for the safe execution of the Bull Rigging operation, including provisions for ensuring the safety of persons not involved in the lifting or hauling operation.

3.4 Planning

3.4.1 Categorization of Bull Rigging Operations

In order to prescribe the extent of planning, review, and skilled oversight appropriate to the risk of each Bull Rigging operation, all Bull Rigging operations shall be categorized by the RS/BR PIC as being either “Critical” or “General” based on the operational risk characteristics in accordance with the guidelines contained in **Table 1**.

Table 1: Operational Risk Characteristics

Operation Risk Characteristics	Risk Level
Unknown center of gravity and/or weight	Critical
Center of gravity is above attachment points	
Stability is in doubt, load could tip or flip, top heavy loads	
Use of sling angles 45 degrees or flatter	
Unknown strength of load-handling equipment (LHE) anchor points	
Unknown capacity of load support points	
Rigging operations near or over operating equipment	
Loads skidded or skated along an incline	
Load not responding in accordance with the plan (not moving or moving inappropriately)	
Loads to be upended or flipped	
Transfer of load from crane to structure	
Three or more lifting devices being used	
Load to be handed off from one means of support to another mid operation	
Load exceeding 75% of mechanical device working load limit	
Bull Rigging operations not meeting any critical risk criteria	General

3.4.2 Bull Rigging Planning Requirements

- Bull rigging personnel qualification documentation shall be on record and available for inspection by site personnel. It is not generally required that documentation is appended to the Bull Rigging plan.
- Subcontractor personnel performing functions on the UPF Project shall, at minimum, be qualified to standards that are equivalent to those required of Bechtel personnel performing similar functions.

Prerequisites

- The RS ensures all Bull Rigging operations (even routine ones) are planned and the best rigging practices are used in the planning and execution of work activities.
- The RS ensures all Bull Rigging plans:
  - Define the methodology to be used to execute the work safely and efficiently.
  - Address the hazards posed by the operation and ensure controls are designed to mitigate the risk of the operation so far as is possible.
  - Define measures to be taken to manage the residual risk.
- The RS appoints a qualified BR PIC for each Bull Rigging operation who will lead and be responsible for executing the Bull Rigging operation on the jobsite.
- The BR PIC shall explain the Bull Rigging plan to the participants before starting the operation. The formality of this discussion varies by risk category.

Requirements by Risk Category

General Risk Bull Rigging Operations

- The BR PIC creates the Bull Rigging plans for general risk operations in discussion with the Bull Rigging Team Members.

- The plan is a verbal agreement on how the operation is to be conducted in conjunction with a JHA and STARRT.

NOTE 1: *Refer to Y17-95-64-823,* UPF Safety Task Analysis and Risk Reduction Talk/Job Hazard Analysis Program (STARRT/JHA) Process*.*

NOTE 2: *The STARRT Card does not cover all safety requirements associated with work on a construction site.*

- The BR PIC in a general risk Bull Rigging operation shall, at a minimum, be a Qualified Bull Rigger as defined in Y17-95-64-900.

Critical Risk Bull Rigging Operations

- The BR PIC will complete a Bull Rigging Plan (refer to CFN-1352, *Bull Rigging Plan*). This plan shall be supplemented by a relevant sketch of load-handling methods for the task and any other information required to adequately explain the intent.
- The Bull Rigging Plan will show where the rigging is to be placed and the specific rigging needed for the task.
- The BR PIC develops the Critical Risk JHA and validates it has been reviewed and understood by all team members involved in the Bull Rigging operation.

The BR PIC shall complete the STARRT card Review.

- The BR PIC will conduct a briefing with the Bull Rigging team prior to load-handling operations, reviewing the JHA, STARRT card, and, as applicable, the Bull Rigging Plan to inform team members of the work plan, the hazards present, and the control measures in place to manage risk to personnel and property.
- All members of the Bull Rigging operation will sign the STARRT card, documenting their attendance at the pre-operation briefing and agreement to adhere to the work plan, established controls, and any hold/stop work points.
- Bull rigging activities identified as a Critical Risk Operation are required to be directed by a BR PIC.

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3.5 Hazard Briefing

The BR PIC ensures the Bull Rigging team understands any job-specific procedures regarding hazards before starting the Bull Rigging operation. This includes, but is not limited to, the following:

- Mechanical and Electrical Hazards – when Bull Rigging operations take place near electricity or mechanical energy sources that are not locked out or de-energized, and where danger to the riggers or other personnel involved in rigging activities may exist.
- Moving Equipment Hazards – when Bull Rigging operations take place near moving machinery, vehicles, or equipment, if danger to the riggers or personnel involved in the rigging activities exist.
- Hazardous Materials – when Bull Rigging activities occur in environments where the presence or possible release of hazardous materials endangers the riggers or other personnel.
- Confined Spaces – when Bull Rigging operations take place in a confined space.

- Lifting Over Personnel – note that persons are not allowed, either in whole or in part, under any portion of a suspended load except as allowed by OSHA Regulation – 29 CFR Part 1926, Subpart R, *Steel Erection*. Personnel assigned to rigging (i.e., attaching and/or detaching rigging hardware to an intended load) are permitted under the lifting/rigging hardware only, and to the extent required to attach or detach the hardware from the intended load prior to or after it has been lifted.
- Public Protection – when Bull Rigging operations take place near the public, where danger to the riggers or other personnel involved in the rigging activity exists from foreseeable activity of the public, or where danger exists from foreseeable consequences of the Bull Rigging operation.
- Temporary Supports – when loads are set upon or moved across temporary structures or supports, or when lifts or hoists are set up on or are supported by temporary structures or supports during the Bull Rigging process.
- Floor/Structure Loading – when loads are moved across floors, roofs, decks, or other portions of a permanent structure, the design loading capacity shall not be exceeded without approval by a qualified engineer.
- Weather Conditions – when weather conditions such as high winds, storms, lightning, fog, ice, or snow may affect the operation and endanger the bull riggers or other persons.

3.6 Equipment

- All rigging shall be used in the manner intended by the manufacturer and within their specifications and/or guidelines.
- All elements of the rigging arrangement shall always be used within their rated capacities after applying appropriate rating reduction factors for the mode of use (D/d ratio, side loading capacity, hitch configuration used, etc.).
- A qualified rigger shall inspect rigging equipment prior to use and as necessary during its use to ensure that it is safe.
- If a piece of lifting or load restraint equipment is deemed to be defective, an Out of Service tag shall be attached to it and the equipment shall be returned to the Rigging Superintendent or designee for repair or replacement. Defective equipment deemed beyond practical or economic repair shall be rendered unusable and properly disposed of; the register of Lifting Equipment shall be updated accordingly.
- Periodic and annual inspections shall be performed in accordance with Y17-95-64-875, *UPF Control of Hoisting and Rigging Equipment.*
- All lifting and load restraint equipment and accessories must be stored in a controlled area.

3.7 Structural Steel Limitations

- Suitable structural anchor points shall be chosen for the attachment of rigging; those points shall be adequate for the most onerous load condition (magnitude and direction) the rigging will impose.
- Loading of a structural steel member shall not be permitted unless the member is designed to be of load bearing capacity or is designed as a primary pipe and/or mechanical support.

- If a visual assessment by the BR PIC gives any concern regarding the capacity of the proposed anchor point, the BR PIC shall elevate the concern to PFE for review and confirmation. If any potential discrepancies are noted between the capacity of the rigging anchor point and the weight of the load, then the process will be stopped and the Project Field Engineer consulted.
- Steel grating, landscape timbers, scaffolding, conduit, and piping shall not be used as anchor points to support rigging hardware. All anchors shall be verified by Project Field Engineering for proper capacity and suitability for suspended rigging hardware and subsequent loadings.

3.8 Temporary Load Support

- The primary planning objective for Bull Rigging is to install the load on permanent supports and limit the length of time a load is required to be suspended from a mechanical lifting device and/or synthetic lifting sling.
- Where a load cannot be installed in its final resting position within one work shift, the BR PIC, in conjunction with the Rigging Superintendent or designee, shall determine the equipment and rigging practices necessary to positively secure and control the load in a temporary supported position prior to the load being lifted.
- Temporary rigging, particularly synthetic slings and mechanical lifting devices (e.g., chain hoist), should not be used to hold up, or hold in place, any structural components, material, or equipment for any period longer than the end of the shift in which the use began. For multiple shifts within a 24-hour period, the Bull Rigging being used as a temporary support can be transferred to the next work shift; however, mechanical lifting devices and synthetic slings should not remain as a temporary hanger longer than 24 hours.
- All loads that will be suspended by a mechanical lifting device and not immediately placed into final position should be properly secured with pipe hangers, pipe shoes, and/or other supports with a known and adequate, working load limit.
- A Qualified Bull Rigger must complete the installation of temporary pipe supports under the direction of the Rigging Superintendent or designee.
- In all cases where a load is left suspended, the Bull Rigging team shall establish a red danger hard barricade that secures the drop zone hazard area. The barricade shall be equipped with signage indicating the suspended load hazard and entry by authorized personnel only.

3.9 Monitoring the Operation

Once all the preliminary activities have been satisfactorily completed, the BR PIC can initiate the Bull Rigging operation.

- The BR PIC monitors the execution of the Bull Rigging operation to ensure it remains on track, that conditions remain within established parameters, and no unanticipated hazards are presenting themselves.
- The BR PIC ensures loads and rigging equipment, etc., are always monitored to ensure the operation is progressing as planned and the rigging equipment remains within capacity. This monitoring is particularly important when upending or flipping loads. If any unanticipated shifting of weight occurs, the operation shall be stopped until the reason for the weight shift is adequately understood and the

BR PIC and Bull Rigging team are satisfied it is safe to resume operations. If necessary, the assistance of a rigging engineer shall be sought to investigate.

- The BR PIC ensures the load is not completely released from the rigging equipment until it is confirmed that the load is leveled/aligned as required, is stable, and is securely supported.

3.10 Bull Rigging Safety Assessments

- The safety assessment process is a method used for gathering reliable data through inspection, observation, and inquiry to identify program strengths as well as opportunities for improvement.
- To measure the level of implementation of this procedure and the effectiveness of risk reduction controls, periodic compliance assessments of Bull Rigging operations will be conducted by Project personnel, which may include, but is not limited to, Construction Line Supervision, ES&H Representatives, and Field Engineering.
- An example Bull Rigging safety assessment form is provided in **Attachment 3, *Bull Rigging Safety Assessment (Sample)***.

4.0 RECORDS

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

The following records generated are:

PRCN 02

Record or Form Number	Record Title	System/ Location	Document Type
CFN-1352	*Bull Rigging Plan*	InfoWorks	BRP

5.0 REFERENCES

5.1 Source References

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

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

ASME B30.20, *Below-the-Hook Lifting Devices*

ASME B30.23, *Personnel Lifting Systems*

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ASME B30.5, *Mobile and Locomotive Cranes*

ASME B30.6, *Derricks*

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ASME Design Standard BTH-1 2008, *Design of Below-the-Hook Lifting Devices*

Bechtel Crane Foundation Handbook

Bechtel Rigging Handbook

ML-PS-801768-A004, *Uranium Processing Facility Project Records Retention and Turnover List* PRCN 02

OSHA Regulation – 29 CFR Part 1926, Subpart H, 1926.251, *Rigging Equipment for Material Handling* PRCN 02

Specialized Carriers & Rigging Association Manual/Bull Rigging Competency Guidebook

UPF-CP-219, *Suspended Personnel Platforms*

UPF-MANUAL-CM-001, *Uranium Processing Facility Construction Electrical Safety Manual*

Y15-95-813, *UPF Control of Suspect/Counterfeit Items* PRCN 02

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

Y17-95-64-872, *UPF Cranes Use and Operation*

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

Y90-95-027, *UPF Training Program*

5.2 Interfacing References

OSHA Regulation – 29 CFR Part 1926, Subpart R, *Steel Erection*

Y15-95-800, *UPF Document Management* PRCN 02

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

Y17-95-64-874, *UPF Rigger, Signal Person, and Competent Person Rigger Qualification*

Y17-95-64-875, *UPF Control of Hoisting and Rigging Equipment*

Y17-95-64-900, *UPF Bull Rigger Qualifications*

6.0 SUPPLEMENTAL INFORMATION

Appendix A, *Acronyms and Definitions*

Appendix B, *Bull Rigging Process Flowchart*

Attachment 1, *Multi-Entity Work Process DOR (Sample)*

Attachment 2, *Bull Rigging Safety Assessment (Sample)* PRCN 02

APPENDIX A
Acronyms and Definitions

(Page 1 of 2)

Acronyms

ASME	American Society of Mechanical Engineers
BNI	Bechtel National, Inc.
BR PIC	Bull Rigging Person in Charge
CPR	Competent Person Rigger
DOR	Division of Responsibility
ES&H	Environmental, Safety, and Health
JHA	Job Hazard Analysis
LHE	Load-Handling Equipment
NCCER	National Center for Construction Education
OSHA	Occupational Safety and Health Administration
PFE	Project Field Engineer
PFS	Project Field Superintendent
RS	Rigging Supervisor
STARRT	Safety Task Analysis and Risk Reduction Talk
UPF	Uranium Processing Facility

Definitions

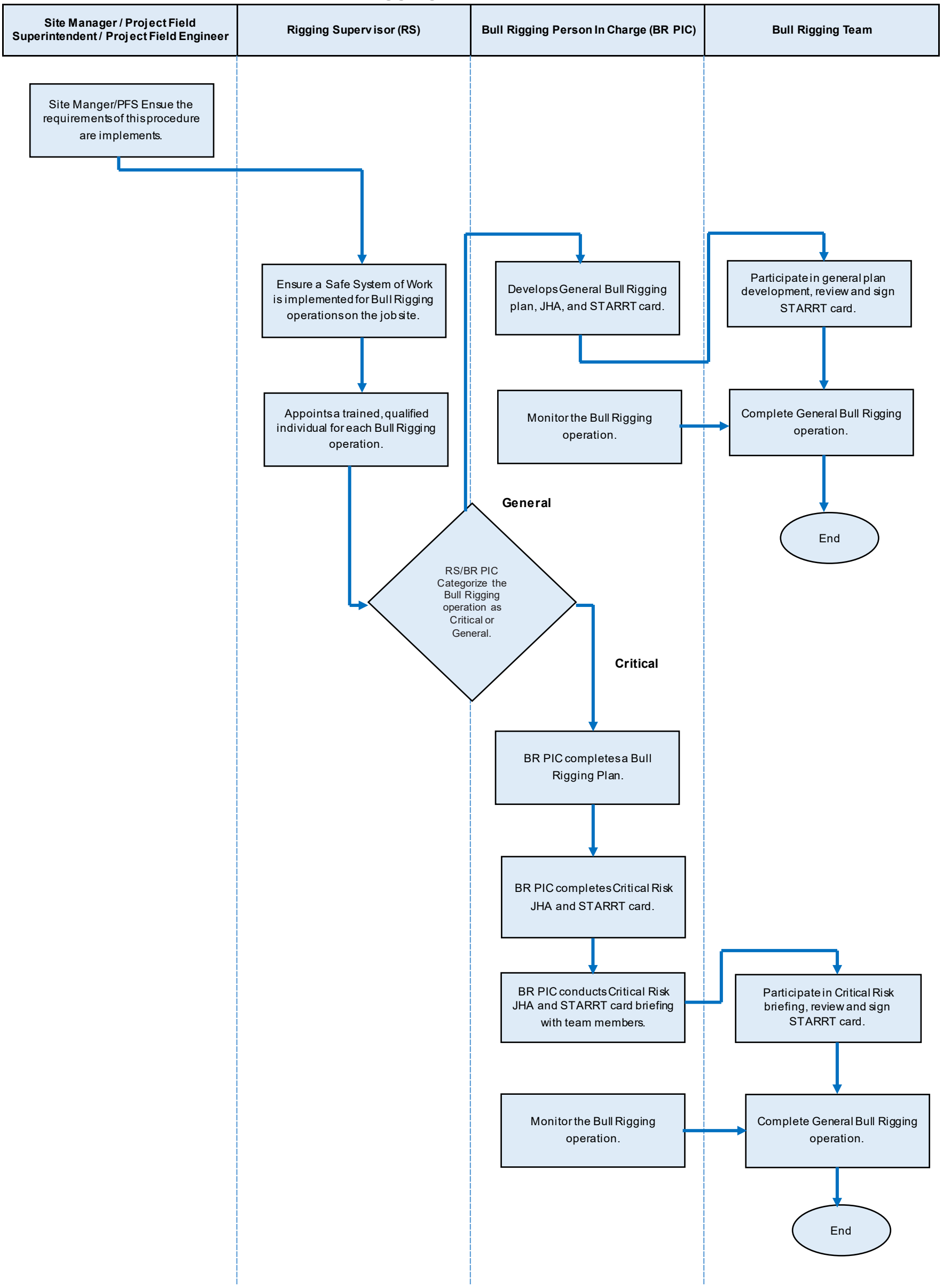
Bechtel Equipment Operations	Bechtel's construction equipment division; Bechtel's rigging engineering group is based to Bechtel Equipment Operations
Bull Rigger Person in Charge	An Advanced Rigger (e.g., qualified through the National Center for Construction Education [NCCER] or other equivalent educational scheme) who has been assessed by a UPF Qualified Evaluator to meet the criteria for a Qualified Person and by a Competent Person Rigger Trainer to meet the criteria for a CPR and UPF Bull Rigger in accordance with Y17-95-64-900 An individual appointed to have control and responsibility of a bull rigging (lifting or moving) operation on behalf of the Project to ensure safe implementation of the work operations
Bull Rigging	Bull rigging (also referred to as manual rigging, live rigging, fleeting, and close quarter rigging) is a term used to refer to the lifting, moving, and/or manipulation of objects by means other than cranes, typically using a custom arrangement of rigging equipment such as chain hoists, lever hoists, industrial rollers, air skates, jacks, winches, and rigging blocks. Such devices may be unpowered, manually powered, or electrically/air/hydraulically assisted.

APPENDIX A
Acronyms and Definitions

(Page 2 of 2)

Bull Rigging Plan	The information necessary to accomplish the operation ensuring its safety and efficiency The plan must explicitly communicate the scheme and specify the risk control measures to be adopted in its execution to address the hazards present. The minimum contents of a plan vary according to the complexity of the operation and the risk it poses; a plan for a simple low-risk operation may be verbal, whereas a plan for a complex critical operation will be documented and very comprehensive. A sample plan is included in **Attachment 2**.
Bull Rigger	An Intermediate Rigger (e.g., qualified through the NCCER or other equivalent educational scheme) who is further qualified as a Bechtel Bull Rigger in accordance with Y17-95-64-900
Competent Person Rigger	A Rigger with advanced rigging skills who is qualified as Bechtel Competent Person Rigger in accordance with Y17-95-64-874, *UPF Rigger, Signal Person, and Competent Person Rigger Qualification*
Critical Risk Operation	A Bull Rigging operation with one or more operational risk characteristics
D/d Ratio	D is the diameter of the curvature around which the body of a wire rope sling is bent; d is the diameter of the wire rope.
General Risk Operation	A Bull Rigging operation not classified as a Critical Risk Operation
Job Hazard Analysis	A pre-job planning process, required for all Bull Rigging operations, that breaks down a work activity into its component steps, evaluating each step to identify hazards, and identifies corresponding hazard mitigation treatments
Lifting Device	Any manual or powered machine used to lift a load; such devices may include, but are not limited to, a crane, winch, tugger, chain hoist, lever hoist, hydraulic or mechanical jack, levers, pulley system, beam trolley, floor gantry crane, etc.
Rated Load Capacity	The maximum hoisting or carrying capacity that a lifting or transportation device is rated to lift or transport in the specific configuration and operating conditions applying to its use

APPENDIX B
Bull Rigging Process Flowchart



ATTACHMENT 1
Multi-Entity Work Process DOR (Sample)

MULTI-ENTITY WORK PROCESS DOR

Work Process: Construction Rigging Work Operations	Date:
Project No.:	Project Name:
Subcontract No.:	Subcontractor Name:
Entity #1:	Entity #2:
Entity #3:	Entity #4:

Work Process Step:	Responsibility P = Primary; S = Support; M = Monitor; A = Approve				
	Bechtel	Entity #1	Entity #2	Entity #3	Entity #4
1. Develop critical Bull Rigging execution plan describing how the work will be accomplished					
2. Review and approve critical Bull Rigging plans, calculations, and drawings					
3. Implement and document training					
4. Prepare Bull Rigging Plan					
5. Prepare Detailed Plan for Critical Lifts					
6. Prepare calculations for Critical Bull Rigging Plans					
7. Ensure operators qualified					
8. Prepare the Critical Rigging paths and/or Lift site to accomplish the task, (i.e. level, compaction, clearance, etc.)					
9. Inspect and accept crane setup					
10. Approve lift and spreader beam calculations and drawings					
11. Pre-lift inspections and safety checks					
12. Verify Bull Rigging setups prior to performing the work					
13. Execute rigging work per the approved plan					
14. Remove/Return rigging equipment from the worksite after the completion of the work					

Comments:

Performed by:	Date:
Reviewed by:	Date:

PRCN 02

ATTACHMENT 2
Bull Rigging Safety Assessment (Sample)

Assessors:	**Date:**

	Yes	No		Yes	No
1. A bull rigging person-in-charge (BR-PIC) has been assigned to oversee the work activity?	☐	☐	13. Rigging has undergone quarterly, and pre-use inspection and manufacturer's tags and data plates are legible?	☐	☐
2. The operational risk rating (critical or general) has been correctly determined?	☐	☐	14. Where required, softeners are used to protect slings and structural members?	☐	☐
3. BR-PIC qualifications correspond to the operational risk rating?	☐	☐	15. Where required, tag lines are used?	☐	☐
4. Work crew qualifications correspond to the operational risk rating?	☐	☐	16. Mechanical lifting equipment used in accordance with MFG's requirements?	☐	☐
5. A JHA specific to the work activity has been completed, reviewed and signed by all crew members?	☐	☐	17. When shifting loads, a plan for people placement has been completed?	☐	☐
6. A Bull Rigging Work Operations STARRT Card has been completed, and all crew members attended the pre-operational meeting?	☐	☐	18. Workers are not working under a suspended load?	☐	☐
7. A Bull Rigging Plan has been developed, for Critical Operation tasks, and signed by all crew members?	☐	☐	19. Workers are not putting themselves in the line of fire?	☐	☐
8. The center of gravity and load weight has been determined?	☐	☐		☐	☐
9. Load attachment points are capable of supporting force imposed?	☐	☐		☐	☐
10. Suitable structural anchor points chosen for the attachment of rigging?	☐	☐		☐	☐
11. As configured, the SWL of slings and hardware will not be exceeded?	☐	☐		☐	☐
12. Barricades erected are complete, contain information tags, are in good condition and fully isolate the bull rigging area?	☐	☐		☐	☐
Comments:					