



<p>ND Bakken Completions</p>	<p>Procedure – Installing Pumping Unit Safety Device</p>	
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EXPLORATION AND PRODUCTION OPERATIONS

<p>Bakken Completions Procedure – Installing PU Safety Device</p>
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ND Bakken Completions	Procedure – Installing Pumping Unit Safety Device	
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Document Control

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RELEASE STATEMENT
Check one box only
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<p>ND Bakken Completions</p>	<p>Procedure – Installing Pumping Unit Safety Device</p>	
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Table of Contents

1.0 INTRODUCTION TO THIS PROCEDURE 4

 1.1 Purpose of this Procedure 4

 1.2 Scope of this Procedure 4

 1.3 Definitions, Abbreviations and Acronyms used in this Procedure 4

 1.4 Referenced Documents 5

 1.5 Accountability for this Procedure 6

 1.6 Filing and Retrieval 6

 1.7 Continual Improvement..... 6

 1.8 Deviations from this Procedure..... 6

2.0 GENERAL EHS REQUIREMENTS 7

 2.1 Applicable Hess Rules..... 7

 2.1.1 Energy Isolation..... 7

 2.1.2 Working at Heights 7

 2.2 Mandatory EHS Controls 7

 2.3 Pre-requisite Equipment and Personnel..... 8

3.0 PROCEDURE 9

 3.1 Installing Pumping Unit Energy Control and LOTO Apparatus 9

APPENDIX A - INSTALLATION DIAGRAMS 12

APPENDIX B - PROCEDURE AUDIT CHECKLIST 16

<p>ND Bakken Completions</p>	<p>Procedure – Installing Pumping Unit Safety Device</p>	
-------------------------------------	---	---

1.0 INTRODUCTION TO THIS PROCEDURE

1.1 Purpose of this Procedure

This Procedure provides the Hess North Dakota (Bakken) minimum mandatory management requirements and prohibitions for installing the energy-control and lock-out, tag out (LOTO) apparatus to Pumping Units (PUs) prior to stopping the PU with the counterweights raised at the 12 o'clock position.

1.2 Scope of this Procedure

This Procedure shall apply to all of Hess' sites in North Dakota (ND) where installing the necessary energy control and LOTO apparatus onto Pumping Units is required.

This Procedure shall be applied by all Hess' direct employees and any contractor or sub-contractor who is installing the energy control and LOTO apparatus.

If contractors or other third parties who provide the services outlined in this Hess Procedure have their own Procedure that is equivalent to this document, Hess may authorize and approve its use.

1.3 Definitions, Abbreviations and Acronyms used in this Procedure

Shall – indicates a mandatory course of action.

Should – indicates a preferred course of action.

May – indicates a permitted course of action.

A description of the other definitions, abbreviations, and acronyms used in this Procedure are provided in Table 1.

ND Bakken Completions	Procedure – Installing Pumping Unit Safety Device	
-----------------------	---	---

Table 1 – List of Definitions, Abbreviations and Acronyms


Abbreviation or Acronym	Definition
HR	Hess Representative
PPE	Personal Protective Equipment
H ₂ S	Hydrogen Sulphide (“Sour gas”)
FR	Fire Retardant
ND	North Dakota
LOTO	Lock-out, tag-out
PU	Pumping Unit

1.4 Referenced Documents

A listing of documents referenced in this Procedure is provided in Table 2.

Table 2 – List of Referenced Documents

Document Name	Document Number
<i>Procedure - Personal Protective Equipment</i>	2.14 (9/1991)
<i>Procedure – Fire Retardant Clothing</i>	3.15 (4/2005)
<i>Procedure - Incident Reporting</i>	3.24 (3/1992)
<i>Procedure – Hazard Spotting</i>	BC-EHS-P-001
<i>Procedure – Hydrogen Sulphide</i>	2.07 (6/1994)
<i>Procedure – Energy Control of Pumping Units</i>	BC-CR-P-002

<p>ND Bakken Completions</p>	<p>Procedure – Installing Pumping Unit Safety Device</p>	
-------------------------------------	---	---

1.5 Accountability for this Procedure

The Bakken (ND) *Completions Operations Team Lead* shall be accountable for the following matters:

- The content of this Procedure;
- Ensuring compliance with this Procedure; and
- The periodic review and currency of this Procedure.

In order to maintain currency of this Procedure, it shall be reviewed every three years or whenever appreciable changes to Hess' business environment occur (e.g., where new risk management legislative requirements impose a new duty upon Hess Corporation).

1.6 Filing and Retrieval

The official version of this Procedure shall be the updated version stored in the Hess Management System database. A paper copy may be printed out from this.

Prior to installing the energy control and LOTO apparatus to the Pumping Unit, the Hess Representative (HR or "Consultant") shall ensure that the print-out copy of this Procedure that is available on location has the latest revision number(s) and contains the latest updated information.

1.7 Continual Improvement

Any user of this Procedure who encounters a mistake or confusing entry shall immediately notify the Document Content Owner (listed on the cover page).

1.8 Deviations from this Procedure

Deviations from the mandatory requirements of this Procedure shall be permissible only in the most unusual of circumstances.

In such circumstances, a written request to deviate from the mandated requirements of this Procedure shall be submitted to Hess' Bakken (ND) *Completions Operations Team Lead* for due consideration.

Authorization for requests to deviate from the mandatory requirements of this Procedure may be approved (in writing) by Hess' Bakken (ND) *Completions Operations Team Lead* following a review of the implications of adopting an alternative approach.

<p>ND Bakken Completions</p>	<p>Procedure – Installing Pumping Unit Safety Device</p>	
-------------------------------------	---	---

2.0 GENERAL EHS REQUIREMENTS

2.1 Applicable Hess Rules

The following Hess Rules apply to activities undertaken as part of this Procedure.

2.1.1 Energy Isolation

Stored energy sources shall be identified, isolated, tested and communicated to appropriate personnel before work shall proceed.


2.1.2 Working at Heights

Personal fall protection equipment shall be worn when working 4 feet or higher above ground.

2.2 Mandatory EHS Controls

The following mandatory controls shall be required prior to installing the energy control and LOTO apparatus on to Pumping Units on Hess locations in ND.

- No person shall enter the safety cage around the PU until the electricity within the PU and the kinetic energy within the PU are controlled using a method of primary and secondary isolation together with a lock and a written tag;
- In order to provide management guidance and oversight, the Hess Representative shall be present at all times at the specific location of the work described in this Procedure;
- A pre-work evaluation of wind-speed, wind direction, and other weather factors shall be undertaken by the Hess Representative prior to the isolation activity beginning;
- Installation operations shall not start, or shall cease if weather conditions are not suitable;
- Prior to the installation activity, the job supervisor shall inform, co-ordinate and communicate with other crews performing SimOps on location;
- The potential for the presence of, and release of Hydrogen Sulphide Gas shall be managed by reference to Hess Procedure - *Hydrogen Sulphide (2.07)* and Guideline BC-EHS-G-004;
- Personal gas detectors with the capability to identify H₂S shall be worn by each worker;
- Required Personal Protective Equipment (PPE) and Fire Retardant (FR) clothing shall be worn (refer to Hess *Procedures 2.14 and 3.15*);
- A Job Safety Analysis shall be written or reviewed prior to the installation activity on the PU;


<p>ND Bakken Completions</p>	<p>Procedure – Installing Pumping Unit Safety Device</p>	
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- All workers involved in the installation activity shall monitor the environment for changes using Hess' "Hazard Spotting" process (refer to – Hess *Procedure BC-EHS-P-001*);
- All near-miss incidents or incidents resulting in actual harm shall be reported immediately to the Person in Charge (PIC) (refer to Hess *Procedure - Incident Reporting (3.24)*); and
- All activity shall cease upon the activation of alarms, or if the job becomes unsafe.

2.3 Pre-requisite Equipment and Personnel

The following people, equipment items and/or tools may be expected to be needed to perform the work detailed in this Procedure:

- The energy-control and LOTO apparatus;
- Hess Representative ("Consultant");
- Rig Operator;
- At least two Rig-hands;
- Correct-sized spanners;
- Hess "standard" PPE; and
- Personal gas monitors with the capability to monitor for, and alarm in the presence of H₂S gas.


ND Bakken Completions	Procedure – Installing Pumping Unit Safety Device	
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3.0 PROCEDURE


3.1 Installing Pumping Unit Energy Control and LOTO Apparatus

The Procedure for installing the energy-control and LOTO apparatus is shown below.

Step	Responsible person	Task description	Additional Guidance
1	Hess Representative	The Hess Representative (HR) shall check and verify that weather conditions are suitable for the installation to proceed.	
2	Hess Representative	The HR shall ensure that a pre-job safety meeting with the rig crew involved in installing the apparatus is held, and that this <i>Procedure</i> should be reviewed.	The Procedure shall be reviewed whenever a new team member joins the crew.
3	Hess Representative	The HR shall ensure that an existing JSA be reviewed or a new one written prior to installing the safety apparatus on the Pumping Unit (PU).	Highlight the “Hess Rules” applying to energy-control.
4	Rig-operator	The Rig-operator (RO) shall lead a visual inspection of the PU.	
5	Rig-operator	Ensure that non-essential personnel are removed from the working zone.	The RO shall control access to the working zone.
6	Rig-hand One	Start by sliding the “double-bolt stanchion posts” into the track supporting the Pump Unit motor. See Figure 1 in Appendix A.	
7	Rig-hand One	Pick-up the linking-rod (“long-handled tool”) and carefully “fish” the end of the tool through the pre-manufactured hole in the pawl. See Figure 2 in Appendix A.	It may be necessary to stand at an angle to one side of the Pumping Unit to allow the end of the long-handled tool to enter the hole on the pawl.

<p>ND Bakken Completions</p>	<p>Procedure – Installing Pumping Unit Safety Device</p>	
-------------------------------------	---	---

Step	Responsible person	Task description	Additional Guidance
8	Rig-hand One	Holding the triangular-handle of the linkage-rod, bring the rod into position next to the friction-brake lever on the outside of the PU safety cage.	Take care stepping-up onto the PU concrete platform.
9	Rig-hand Two	Pick-up the bracket-stand and allow the handle of the linkage-rod (held by Rig-hand One) to slide through the “loop” welded onto the side of the stand. See Figure 3 in Appendix A.	
10	Rig-hand Two	Using the pre-drilled holes, place the bracket-stand down over the double-bolt stanchion posts in the PU track. See Figure 4 in Appendix A.	
11	Rig-hand One	Place washers and nuts and then carefully bolt-up the bracket-stand to the double-bolt stanchion posts.	
12	Rig-hand One	Place the linkage-rod into the pre-fabricated slot on the bracket stand. See Figure 5 in Appendix A.	DO NOT apply LOTO to the pawl at this time.
13	Rig-hand One	It is now necessary to place the LOTO device onto the Pumping Unit friction-brake lever. See Figure 6 in Appendix A.	
14	Rig-hand One	Place the LOTO device over the friction-brake lever. See Figure 6 in Appendix A.	

ND Bakken Completions	Procedure – Installing Pumping Unit Safety Device	
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Step	Responsible person	Task description	Additional Guidance
15	Rig-hand One	Insert the chain through the friction brake mounting post (attached to the safety fence) and wrap it around. See Figure 7 in Appendix A.	Leave the chain hanging neatly in readiness for applying LOTO when the PU is stopped.
16	Rig-hand One	Leave the friction-brake lock-out device hanging next to the brake handle.	DO NOT apply LOTO to the brake-handle at this time.
17	Whole crew	Complete housekeeping in the immediate working area prior to starting the next job.	
18	Rig-Operator	The rig is now ready to implement energy control and LOTO on the PU using the procedure specified in BC-CR-P-002.	

APPENDIX A - INSTALLATION DIAGRAMS

Figure 1. Slide the “Double-bolt Stanchion” into the track on the Pumping Unit.



Figure 2. Fish the End of the Linkage-rod through the Hole on the Pawl.



The end of the linkage-rod goes through this hole on the pawl..



Figure 3. Slide the Linkage-rod through the “Loop” welded onto the Bracket Stand.



Figure 4. Slide the bracket-stand over the Double-bolt Stanchion's.





Figure 5. Linkage-rod Held in Place on the Bolted-up Bracket Stand.



Figure 6. Attach the Lock-out, Tag-out Device to the Friction Brake.




ND Bakken Completions	Procedure – Installing Pumping Unit Safety Device	
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Figure 7. To install the LOTO Device, place the “cap” over the handle and insert the chain around the friction-brake mounting post.



The chain can be left hanging loosely around the post. NOTE: This picture illustrates the chain once LOTO has been applied to the friction-brake.

ND Bakken Completions	Procedure – Installing Pumping Unit Safety Device	
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APPENDIX B - PROCEDURE AUDIT CHECKLIST

Installing Pumping Unit Energy Control and LOTO Apparatus

Observer name:	Place of observation:	Date:	Time:
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No.	Procedural Step	Done safely	Not done	NA	Your Comments?
1	Does the Hess Representative (HR) check and verify that the weather is suitable for the job?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Is a pre-job safety meeting held?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Is this <i>Procedure</i> reviewed during the meeting?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Is a JSA reviewed or a new one written?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Does the Rig-operator (RO) lead a visual inspection of the PU?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Does the RO ensure non-essential personnel are removed from the working area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Does the Rig-hand start the installation by sliding the "double-bolt stanchion" into the appropriate track on the PU?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Does the Rig-hand carefully "fish" the linkage-rod into the hole on the pawl?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Does the second Rig-hand slide the loop on the Bracket-stand over the handle on the Linkage-rod to "mate" the two pieces together?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	Is the Bracket-stand carefully placed onto the double-bolt stanchion posts and the washers and nuts tightened-up?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	Does the Rig-hand place the linkage-rod into the holding mechanism on the bracket-stand?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12	Does the Rig-hand place the LOTO "cap" over the top of the friction-brake lever?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	Does the Rig-hand wrap the chain around the friction-brake mounting post?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14	Is housekeeping undertaken when finished?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	