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CHELAN COUNTY

Hydro Project Oil and Grease Accountability Plan



Chelan PUD

Forward

This document, *Hydro Project Oil and Grease Accountability Plan*, describes the procedures for the inspection, assessment, documentation, reporting, transfer, and inventory regarding oil accountability for Rocky Reach and Rock Island Dams at Chelan County PUD (District).

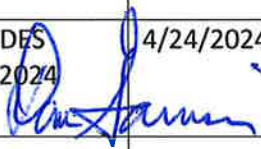
Questions regarding this document or other documents should be directed to Chelan PUD Hydro Director

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Review. This document will be reviewed annually or if conditions change.

History. This is a revised publication of a procedure for this titled subject.

Change Management. Change Management. Any changes to this document must be approved by the Hydro Director.

Record of Review and Changes				
Change No.	Page/ Paragraph/ Section:	Statement of Review or Change:	Date:	Approval:
		Original Date of Issue	3/4/2020	Dan Garrison
1	Various	General review and revision to comply with NPDES issued on February 1, 2024, effective March 1, 2024	4/24/2024	

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1. Purpose

The purpose of this *Hydro Project Oil and Grease Accountability Plan* is to ensure that oil and grease are properly accounted for at the Chelan Public Utility District No 1 (District) Rocky Reach and Rock Island Dams by describing specific inspection, assessment, documentation, reporting, transfer, and inventory procedures. This complements requirements set forth by the District Spill Prevention Control and Countermeasure Plan (SPCC Plan). The function of this procedure is to ensure the District is a good steward of the river by identifying and mitigating potential oil leaks to waterways as early as possible, and accounting for oil leaks to the extent feasible.

2. Applicability

This document applies to all bulk storage containers 55 gallons and over and identified high risk equipment at the District, as defined in Section 4 below.

3. References

40 CFR 112 Oil Pollution Prevention and the District SPCC Plan.

4. Definitions

4.1. Grease

Grease is a semisolid lubricant material derived from animal, fish, vegetable, or petroleum.

4.2. Oil

Oil includes lubricating fluids derived from animal, fish, vegetable, petroleum, or marine mammal origin. Oil is typically used in the operation of equipment including turbines, various hydraulic equipment and power transformers.

4.3. Oil/Grease-filled Equipment \geq 55 gallons.

Oil/grease-filled equipment means equipment in which 55 gallons or more of oil/grease is present solely to support the function of the apparatus or the device. Oil/grease-filled operational equipment is not considered a bulk storage container and does not include oil/grease-filled manufacturing equipment (flow- through process). Examples of oil/grease-filled operational equipment may include hydropower turbines, hydraulic systems, lubricating systems, gear boxes, heat transfer systems, large transformers, and circuit breakers. See Attachment 1.

4.4. Bulk Storage Containers \geq 55 gallons.

Bulk storage container means any container used to store 55 gallons or more of oil/grease. These containers are used for purposes including, but not limited to, the storage of oil/grease prior to use, while being used or prior to further distribution or disposal. Oil/grease-filled electrical, operating, or manufacturing equipment is not a bulk storage container (40 CFR 112). See Attachment 1.

4.5. High-Risk Equipment.

High-Risk Equipment means any oil/grease-filled operating equipment or storage container with oil/grease storage capacity less than 55 gallons with a significant potential for oil release to waterways (e.g. insufficient secondary containment, a likelihood to leak, and from which a relevant

quantity can be released). The intention of identifying this equipment is to implement tracking as a means of reducing the risk of oil/grease releases to waterways. High-risk equipment is identified in Attachment 1.

5. Responsibilities

5.1. Maintenance Superintendent.

The Superintendents (or delegates) are responsible for ensuring that this plan is applied at the District. The Superintendents will assign various crafts persons to fill the role of Project Oil System Inspector(s) (POSI). Superintendents will ensure that reports are reviewed, and remedies are investigated if discrepancies in oil volumes are discovered.

5.2. Hydro Engineers.

The Hydro Engineers are responsible for receiving and reviewing leak inspection and assessment documentation and data, which they compile and track to identify potential trends of oil loss. They then report those findings to the Superintendents and Environmental Program Manager.

5.3. Environmental Program Manager.

The Environmental Program Manager is responsible for reporting oil spills to the environment to the Washington State Department of Ecology and National Response Center.

5.4. Project Oil System Inspector(s).

The POSI(s) is responsible for conducting the field work associated with oil accountability inspections, inventory, and assessments.

6. Requirements

6.1. Inspections

All oil/grease-filled operating equipment (55 gallons or greater), bulk oil/grease storage containers (55 gallons or greater), and high-risk equipment at the Project, as identified in Attachment 1, shall be periodically inspected. Inspections will be accomplished utilizing Preventative Maintenance (PM) work orders.

- Equipment that is readily accessible. Regular PMs will be performed to inspect for leaks, if feasible, to ensure the oil level is in the normal operating range. These PMs will have a classification of Oil Accountability (OILA) and will be critical PMs. A breakdown of inspection schedules can be found in Attachment 1.
- Equipment that is not readily accessible (i.e. fish screen gearboxes). The established annual PM will be used to inspect these assets for leaks and ensure that the oil level is in the normal operating range. These inspections shall have a local work type of OILA and be critical PMs (Attachment 1).
- For other PMs that inspect for leaks and oil levels on identified equipment, such as weekly rounds or main unit annual PMs, the OILA classification does not need to be used. However, follow-up work orders for leaks discovered during these inspections shall have the OILA classification.

6.2. Assessments

General - During inspections or daily activity it may become necessary to initiate an Oil Accountability Assessment. If an assessment is needed, a Service Request classified as OILA will be initiated to conduct an assessment.

Assessment Criteria - An assessment will be generated under the following circumstances:

- At the inspector's discretion. If the inspector feels there is sufficient potential for harm to personnel, equipment, or the environment.
- Any equipment with unexplainable high or low oil levels or alarms.
- Malfunctioning automated grease systems that result in excessive or leaking grease.
- Any leak that has a high likelihood of escaping containment.

Assessment and Documentation – An engineer, mechanic, or electrician will conduct an assessment of the equipment to determine the cause, and the steps needed to correct the deficiency. All findings and actions taken will be annotated in the Oil Accountability Service Request (if no repair is needed) or on the Oil Accountability Work Order (if a repair is needed).

Assessment Reporting - Maintenance Planners will close the work order in the computerized maintenance management system (CMMS) and relevant information will be maintained for at least five years.

6.3. Inventory

When oil is transferred, removed, added, measured, or disposed of from oil-filled operating equipment (55 gallons or greater), bulk oil storage containers (55 gallons or greater), and high-risk equipment at the Project, as identified in Attachment 1, it will be logged in a tracking system. The tracking system is used to calculate oil inventories on a regular basis. See Attachment 2: Oil Tracking System Example, for an example of the tracking system.

6.4. Oil Transfers

Oil transfers will be handled using standard operating procedures. See Attachment 3: SOP for Oil Transfers.

6.5. Auditing of Plan

The Maintenance Superintendents shall audit the project oil accountability procedures annually to evaluate compliance.

6.6. Review of Plan

A periodic usability review will be conducted of the oil accountability plan. The convening review group will consist of, at a minimum: the Maintenance Superintendents, the Environmental Program Manager, the Mechanical Plant Engineers, and the Maintenance Planners.

6.7. Training Standards

Standard Operating Procedures (SOPs), annual SPCC Plan training, basic training on oil tracking procedures (how the tracking forms work), and general training in the job will be provided for all

necessary parties. Contractors shall be trained on the District Oil Accountability Plan during site orientation.

6.8. Annual Reporting

Oil Accountability Work Orders will be generated in the CMMS by Maintenance Planner and reviewed by the Maintenance Superintendents. The Maintenance Superintendents, or designee will send an annual inspection and assessment report to the Environmental Program Manager.

The annual assessment report will include, to the extent feasible, the locations, amounts, types, and uses of oils and lubricants described in Attachment 1, and as displayed in Attachment 2.

6.9. Records and Measurements Retention

All records regarding oil accountability shall be maintained for 5 years.

Attachment 1: Equipment and Inspections
Rocky Reach Oil and Grease Inspection Responsibilities and Documentation

Equipment	Oil leak/level inspection frequency	Inspector	Inspection Type	Equipment Type Reference*
GENERATION UNITS				
Governor System	Monthly	Mechanic	Visual/Level	OE
Thrust Bearing System	Monthly	Mechanic	Visual/Level	OE
Turbine Guide Bearing System	Monthly	Mechanic	Visual/Level	OE
TRANSFORMERS				
Main Transformers	Monthly	Wireman/Mechanic	Visual	OE
SS Transformers	Monthly	Wireman/Mechanic	Visual	OE
Spare Main Transformer	Monthly	Wireman/Mechanic	Visual	OE
RR Switchyard Station Service Feed	Monthly	Wireman/Mechanic	Visual	OE
FISH BYPASS SYSTEM				
SC HPU1	Monthly	Mechanic/JFB Operator	Visual/Level	OE
SC HPU2	Monthly	Mechanic/JFB Operator	Visual/Level	OE
IS HPU	Monthly	Mechanic/JFB Operator	Visual/Level	OE
SF HPU	Monthly	Mechanic/JFB Operator	Visual/Level	OE
Trash Rake Sumps	Monthly	Mechanic/JFB Operator	Visual/Level	OE
CRANES				
Intake Gantry Crane Main Hoist Gear Reducer	Monthly	Mechanic	Visual	OE
STORAGE				
Clean Oil Room Storage Tanks	Monthly	Mechanic	Visual/Level	BS
Dirty Oil Room Storage Tanks	Monthly	Mechanic	Visual/Level	BS
Used Oil Storage Tanks	Monthly	Mechanic	Visual/Level	BS
Shrek	Monthly	Mechanic	Visual	BS
GENERAL				
Spillway Emergency Diesel	Monthly	Mechanic	Visual	OE

Inspection Definitions:

Visual: Inspect equipment for signs of leakage, observe oil level in normal range

Level: Record actual oil levels or quantities

***HR = High Risk, BS = Bulk Storage >55 gallons, OE = Oil-filled Equipment > 55 gallons**

Rocky Reach Oil and Grease Inspection Responsibilities and Documentation

Equipment	Oil leak/level inspection frequency	Inspector	Inspection Type	Equipment Type Reference
GENERATION UNITS				
Governor System	Monthly	Mechanic	Visual/Level	OE
Thrust Bearing System	Monthly	Mechanic	Visual/Level	OE
B-8 Farval System	Monthly	Mechanic	Visual/Level	HR
PH2 Draft Tube Gate System	Monthly	Mechanic	Visual/Level	OE
TRANSFORMERS				
Main Transformers	Monthly	Wireman	Visual/Level	OE
PH1 SS Transformers	Monthly	Wireman	Visual/Level	OE
PH1 Village Feeder	Monthly	Wireman	Visual/Level	OE
Pad mount transformers	Monthly	Operator	Visual	OE
Spare PH1 Transformer	Monthly	Operator	Visual	OE
CRANES				
PH2 Intake Gantry Crane Main Hoist Gear Reducer	Monthly	Mechanic	Visual	OE
PH2 Intake Gantry Crane Aux Hoist Gear Reducer	Monthly	Mechanic	Visual	OE
PH2 N. Bridge Crane Main Hoist Gear Reducer	Monthly	Mechanic	Visual	OE
PH2 S. Bridge Crane Main Hoist Gear Reducer	Monthly	Mechanic	Visual	OE
PH2 Intake Gantry Crane Main Hoist Gear Reducer	Monthly	Mechanic	Visual	OE
STORAGE				
Clean Oil Storage Tanks	Monthly	Mechanic	Visual/Level	BS
Dirty Oil Storage Tanks	Monthly	Mechanic	Visual/Level	BS
Used Oil Storage Tanks	Monthly	Mechanic	Visual/Level	BS
PH1 Transfer Tank	Monthly	Mechanic	Visual/Level	BS
Transformer Oil Storage Tank	Monthly	Mechanic	Visual/Level	BS
Right Bank Satellite Used Oil	Monthly	Mechanic	Visual/Level	BS
GENERAL				
Spillway Emergency Diesels	Monthly	Mechanic	Visual	OE
Fuel Station	Monthly	Mechanic	Visual	OE
PH2 Trash Rack Cleaning System	Monthly	Mechanic	Visual	OE
RIGHT FISH LADDER				
Attraction Water Pump Gearboxes	Monthly	Mechanic	Visual	OE
RO4 Gate system	Monthly	Mechanic	Visual	HR
Juvenile Fish Trap System	Monthly	Mechanic	Visual	HR

Inspection Definitions:

Visual: Inspect equipment for signs of leakage, observe oil level in normal range

Level: Record actual oil levels or quantities

***HR = High Risk, BS = Bulk Storage >55 gallons, OE = Oil-filled Equipment > 55 gallons**

Attachment 2: Oil Tracking System Example

Start Date								
Finish Date								
Plant	Rocky Reach							
Equipment	Product	Start Volume	Additions	Removals	Finish Volume	Volume Difference	Comments	
GENERATION UNITS								
C-1 Governor System								
C-1 Thrust Bearing System								
C-1 Turbine Guide Bearing System								
TRANSFORMERS								
C-1 Main Transformer								
SS-1 Transformer								
Spare Main Transformer								
RR Switchyard Station Service Feed								
FISH BYPASS SYSTEM								
SC HPU1								
SC HPU2								
IS HPU								
SF HPU								
Trash Rake Sumps/levels								
CRANES								
Intake Gantry Crane Main Hoist Gear Reducer								
STORAGE								
Thrust Oil Storage Tanks								
Governor Oil Storage Tanks								
Used Oil Storage Tanks								
Shrek								
Portable Used Oil Storage Tank								

Attachment 3: SOP for Oil Transfers

RR, RI, CHHD Oil Transfer and Inventory Procedure

Procedure type: Routine Maintenance

1.0 Introduction

1.1 General description- It is necessary when doing maintenance on oil (filtering) or Unit (turbine-generator) to transfer oil from one location to another. The purpose of this Oil Transfer Plan is to maintain consistent care in the handling of oil and the systems used to make transfers.

1.2 Scope- This procedure outlines the process for transferring oil including: where oil is located and equipment used to make a transfer.

1.3 Preliminary considerations

- At any time oil is being transferred or circulated it **will** be communicated and recorded to include:
 - Moving oil within the plant from one location to another for maintenance
 - Disposals and deliveries of oil
- Inspect oil transfer equipment and associated valving for abnormalities prior to transfer.
- Perform walk thru of entire oil transfer path system to inspect for any issues, ensuring valves are in the proper position.

2.0 Job Requirements**2.1 Staff/ crafts needed**

- Typically 2- personnel

2.2 Skills and qualifications

- Plant Engineer/ Mechanic trained in proper transfer and recording of oil

2.3 Tools and equipment

- Specialty equipment (to include totalizers, carts, attachment nozzles and hoses)
- (2)- Plant radios

2.4 Parts and materials

- Ensure correct oil is used for application

3.0 Safety

- Perform a Pre-Task Plan prior to any movement of oil and identify the following:
 - Quantity of oil to be moved
 - Location where oil will be transferred 'from' and 'to'

- Personnel responsible for operating oil transfer equipment.
- Tasks, responsibilities and actions during oil transfer.
- Discuss spill response procedures in the unlikely event of a spill.
- Ensure oil spill response kit is available in the event of a spill.
- Use proper oil handling PPE where applicable.
- If a need to leave arises during the transfer process, all transfers must be discontinued until personnel are back at the transfer site.

4.0 **References**

4.1 **Prints/ drawings- N/A**

4.2 **Manuals/ OMI/ associated procedures**

- Spill Prevention Control and Countermeasure Plan (SPCC)

4.3 **SRS/ data sheets (ITP)/ check sheets**

- Oil Transaction SRS

5.0 **Procedure**

5.1 **Oil Transfer Procedure**

1. **[CRITICAL STEP] VERIFY** that all valves within the transport path are in the proper position.
2. **CONTACT** powerhouse operator to ensure they are aware oil transfer will be starting (as needed).
3. **STAGE** (1) person at the sending and (1) person observing at receiving end of oil.
4. **PERFORM** radio check prior to transferring oil (use talk around channel if needed).
5. **TAKE** oil sample (as needed).

WARNING: In the event of an inadvertent release of oil to any drain, personnel must be sent immediately to observe activity in the oil water separator (OWS). Monitor condition of water entering OWS based on discretion of Maintenance and Operations Supervisors to ensure there is good water quality (no oil) leaving OWS.

CAUTION: If there is an inadvertent release of oil to anywhere other than the intended location, Operator is to be notified immediately as per the SPCC. Maintenance Supervisor or Plant Mechanical Engineer must be notified as soon as possible.

6. **[CRITICAL STEP] BEGIN** transfer of oil.
7. **ENSURE** oil is being transferred to intended location.
8. **COMMUNICATE** via radio that transfer is occurring as intended.
9. **COMMUNICATE** via radio to stop oil transfer (once oil level is achieved).
10. **STOP** transfer of oil via transfer equipment.

5.2 Once Oil Transfer is Complete

1. **CONTACT** operator once oil transfer is complete and provide time and oil quantity transferred.
2. (Operator) **LOG** name of person making the notification along with time, location and approximate amount of oil to be moved.
3. (mechanic) **LOG** oil transfer quantity in the Oil Transaction SRS.
4. **RETURN** all oil transfer equipment and associated valving to normal inactive condition.
5. (Mechanic) **PROVIDE** the Plant Mechanical Engineer oil transfer information for logging on master inventory document.
6. **GIVE** oil sample to Plant Engineer (if applicable).

Reviewed/Approved by:	Description	Date	Version/ Revision number
RI/RR Toney, Simpson/ Sembritzky, Hulbert- SME	New procedure generated using Tech Library HPI template.	02/07/2020	Ver. 1 Rev. 0
RI/ RR Superintendents, Penny Hulbert, Greg Bush- SME	Removed Section 5.1 Step 3 and moved to Section 5.2, step 2. Revised warning on page 2 based on discretion of Supervisors.	04/01/2024	Ver. 1 Rev. 1