ENERGY NORTHWEST

INTEROFFICE MEMO

DATE: July 26, 2017

TO: MW Davis, Chemistry/Radiological Safety Manager (927C)

FROM: Robby Peek, Supervisor, Quality Services (PE61) Robert Peek 7/26/17

SUBJECT: Stop Work Order

REFERENCE: QAI-2 "Stop Work Authority"
AR-CR 369386

Recipient Organization:

Columbia Generating Station Chemistry/Radiological Safety Department

Nature and Extent of Deficiency:

Quality is directing a Stop Work Order effective July 26, 2017 in accordance with QAI-2, "Stop Work Authority". The scope of this Stop Work Order is to cease all activities associated with the shipping of radioactive material/waste to offsite organizations or facilities. From October 2014 to July of 2017 there has been multiple deficiencies with the shipments of radioactive waste which has resulted in noncompliance with Federal, US Ecology, and State of Washington requirements. Additionally authorization to use the commercial low-level radioactive waste disposal site by Energy Northwest has been suspended indefinitely. Further shipments will be refused until Columbia Generating Station's use permit is reinstated. Corrective actions taken to date have been ineffective at preventing recurrence. While not all inclusive of every related event, some historical perspective is provided below.

- October 2014, A condensate filter demin radwaste disposal container exceeded the radwaste disposal facility freestanding liquid requirement for acceptance for disposal (limit is 0.5% of waste volume or 5.6 gallons; 8.5 gallons was measured). As a result, the plant had been suspended from shipping radwaste for disposal, expected to last for one to two weeks (AR-CR 316676-B)
- October 2015, just prior to the RWCU System chemical decon a RW Transport cask and 8-120 Poly HIC was ordered to support waste disposal. In order to save

time and radiation exposure in support of the RWCU chem decon, a Radwaste and transportation specialist ordered the cask to be delivered with the disposal container placed into the cask at the vendor facility prior to shipment. Given this, CGS QC was not given the opportunity to inspect the container prior to use. Neither the cask nor Poly HIC is installed plant equipment. As the container is filled with resin, transported, and disposed, a QC inspection is not possible (AR-CR 338421-C).

- November 2015, multiple examples were found with incomplete or inaccurate radioactive shipment documents identified by Quality as an audit Weakness. Examples included missing signatures, missing initials or empty check boxes for procedure steps completion, data table information blanks, differing 2-meter dose rate values, conflicting survey limits for 2-meter dose rate (8 vs10 mR/hr), and incorrect NRC 540 (Manifest) form from the vendor (AR-CR 339249-B).
- April 2016, a planned outgoing shipment of radioactive material from the SFPCU project had been identified as containing a Category 1 quantity of radioactive material as defined in 10 CFR 37 Appendix A. This shipment (a shielded shipping container on a flat-bed trailer) was transferred out of the Protected Area to a Radioactive Material Storage Area near Bldg.117. This area, within the fenced and locked Sea-van storage area surrounding Bldg. 117, did not meet the physical security requirements specified in 10 CFR 37 for Cat1 material (AR-CR 348071-A).
- May 2016, Quality identified a potential performance objective AFI in RP.4 which is associated with radioactive material control, including inadequate surveys and shipping paperwork(AR-CR 349699-3).
- July 2016, a B-25 box with more than 15 percent void space. This is a violation of Condition 24 of Radioactive Materials License WN-I019-2, Amendment 41. Documentation associated with this container indicated the box was 100 percent full. The regulatory consequence was a "warning call. The Supervisor of the Waste Management Section, Office of Radiation Protection, Washington Department of Health warned that future violations of the US Ecology Radioactive Material License may result in escalation of enforcement actions up to suspension of shipping privileges to US Ecology (AR-CR 352217-B).
- August 2016, a trend was identified with Radioactive Waste Packaging/Shipping issues as part of the Chemistry DRUM. (AR-CR 353427-3). The corrective actions from this trend were not identified in a timely manner, such that they may have prevented or minimized the following events.
- November 2016, administrative limit for radioactive waste shipment exceeded; this also exceeds DOT regulations from 10CFR71 for an open transport and will require shipment in an enclosed vehicle (AR-CR 357388-C).
- November 2016, Radwaste shipping container reading found higher than expected at disposal site, WDOH suspended the station's disposal privileges, the shipment was rejected and returned to Energy Northwest (AR-CR 357593-A).
- November 2016, additional Radwaste shipping violation identified in revised WDOH Letter; which indicated a potential violation of 49 CFR 173.427 (Transport requirements for Low Specific Activity radioactive materials) (AR-CR 358775-B).
- January 2017, further analysis of the November 2016 shipping liner identified that the liner was shipped in a Type "A" Cask. Waste characterization analysis was

found to be in error as the survey results indicated that this waste should have been classified for shipment as a Type "B". This situation was a non-conformance with 49CFR173.427 (a) which resulted in a White finding by the NRC (AR-CR 360236-A).

- Most recently, July 2017, an incorrect Radwaste manifest led to suspended Radwaste disposal permit (AR-CR 369215-A)

As a result of these continued issues, Quality is directing a Stop Work Order effective July 26, 2017. The scope of this Stop Work Order is for Chemistry/Radiological Safety Department to cease all activities associated with the shipping of radioactive material/waste to offsite organizations or facilities until actions are in place to preclude recurrence.

These problems are significant in that incomplete and/or inaccurate documentation of radioactive shipping records has led to a loss of regulatory confidence in our ability to accurately document the details associated with radioactive packaging and shipment of materials and waste. Additionally, incorrect details within the shipping manifest can increase risk to the health and safety of the public and offsite facilities during processing. The inability to ship radioactive waste could directly affect the operation of Columbia with the suspension of shipping privileges to US Ecology or other facilities. This condition is not in compliance with Federal, State, and US Ecology requirements.

Identification of work to be stopped:

As the Manager – Chemistry/Radiological Safety, you are hereby directed to **STOP** work involving the shipment of any radioactive material/waste to off-site organizations or facilities.

Date/Time by which work must be stopped:

July 26, 2017 at 12:00

Description of the specific violation:

Quality is issuing a Stop Work to Chemistry/Radiological Safety in accordance with QAI-2, Stop Work Authority, due to continuing evidence of the station's inability to meet federal, state, and vendor requirements supporting radioactive waste disposal. Corrective actions taken have not been prompt or effective in addressing radioactive waste issues and have resulted in NRC Violations, State Violations, and suspension of CGS's licensed access to the state approved disposal facility.

Identification of the specific requirement(s) violated:

The following Federal, State, and US Ecology requirements were not met:

1) Condition 32(A) of US Ecology Radioactive Materials license states in part that Class A ion exchange and filter media, which are classified as unstable, shall contain no more liquid than 0.5% by volume of the waste.
2) Condition 29(A)(2) of US Ecology Radioactive Materials license states that in part that incidental and unintentional liquids entrained in solid material may be received provided that a process control program is used to verify the amount of liquids in the dry material is less than 0.5 volume percent of liquids within the package.
3) 10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR Parts 171 through 180.
4) 49 CFR 173.427(a)(1) requires in part that the external dose rate (for low specific activity (LSA) packages) may not exceed an external radiation level of 10mSv/h (1 Rem/hr) at 3 meters from the unshielded material.
5) WAC 246-249-050 (l)(a)(iii) and US Ecology Radioactive Materials License WN-1019-2 Condition 22 require in part that waste containers received at the facility do not show an increase in the external radiation levels recorded on the manifest, within instrument tolerances.
6) WAC 246-249-090(5) states in part that: Certification. An authorized representative of the waste generator, processor or collector shall certify by signing and dating the shipment manifest that the transported materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, the U.S. Nuclear Regulatory Commission and the department.

The above examples indicate that compliance with these requirements has not been a priority for station personnel, and the continuing trend in performance is considered adverse to quality, sufficient to require this Stop Work Order AR-CR 369386.

Identification of the individual responsible for ensuring the Stop Work Order implementation is monitored:

Michael Davis, Chemistry/Radiological Safety Manager, Columbia Generating Station, Energy Northwest

Specific conditions which must be met prior to the resumption of work and by whom approval is required:

1. Incorporate a distinct independent review that validates the results of the waste characterization and classification for all radioactive/waste shipments. This independent calculation methodology removes the likelihood that any single individual error will be propagated forward to the final shipping manifest.
2. Identify acceptance criteria for the use of the independent calculation including actions to be taken when the results of the calculations performed are inconsistent.

3. Apparent/Root Cause for AR/CR 369215 completed with corrective actions to prevent recurrence. Chemistry/Rad Safety Manager

Requirement for Notification of Manager, Quality in Writing:

As the Manager – Chemistry/Radiological Safety, you are hereby directed to notify the Energy Northwest Manager, Quality in writing, upon completion of correcting the conditions outlined in this stop work order.

Verbal Notifications Made:

Manager, Quality – Chip Moon – Notified on 7/24/17.
Plant General Manager – Robert Schuetz – Notified on 7/24/17.
Chemistry Operations Supervisor - Jason Brown - Notified on 7/24/17.
Radiological Support Supervisor – Richard Sanker - Notified on 7/24/17.
Continuous Improvement Manager – Jack Pierce - Notified on 7/24/17.

'Original signed and filed'

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