

**From:** [Corrado, Jonathan K](#)  
**To:** [Trefethen, Jean](#)  
**Cc:** [Faraz, Yawar](#); [Wiehle, Kelly L](#)  
**Subject:** [External\_Sender] ODH comment resolution  
**Date:** Friday, June 02, 2017 2:20:11 PM

---

**Suggested statement to resolve ODH comment:**

Centrifuge casings will be utilized as waste shipping packages for decommissioning the Lead Cascade. The packages are to be shipped to Nevada National Security Site (NNSS) and are required to meet NNSS Waste Acceptance Criteria (WAC) Section 3.2.14. The centrifuge casings meet the packaging requirements for a type 1 industrial package (IP-1) per 49 CFR 173.411(b) by meeting the general design requirements per 49 CFR 173.410. The WAC Section 3.2.14 requirements are met by meeting the requirements per 49 CFR 173.410 and 49 CFR 173.411.

**Further information for your records:**

Type IP-1 Package (Casing) Design Requirements Compliance

Casings will meet the general design requirements of 49 CFR 173.410 as follows:

- (a) Casings can be easily handled by using forklift tines under the casing, using a spreader beam with straps placed under the casing or by using a four legged sling attached to the two lift lugs and to the opposite end mount holes of the casing. Securing the casings will be properly performed for conveyance on the truck trailer for transport.
- (b) The casing has a safety factor of three against yielding when lifted by the three methods indicated in (a). Some of the casings have an attached steel elbow that could be mistaken as a lifting point. The casing elbow will be covered with plastic wrap, labeled "Not a lifting point" and duct tape wrapped around the elbow to the casing to create a barrier that must be overcome thus rendering it inoperable for lifting the casing.
- (c, d & e) As far as practical, casings are free of significant protruding features, pockets or crevices or features that reduce the safety of the package.
- (f) The casing is capable of withstanding any acceleration, vibration or vibration resonance during normal transport conditions and will not have any effect on casing closing devices, i.e. the steel casing cover plates. As indicated above, the casing cover plates have been extensively tested and will not be affected by normal transport conditions.
- (g) The casing, the steel cover plates and the epoxy sealant are physically and chemically compatible with each other and the contents. Radiation associated with contents of the centrifuge casing is minimal and cannot adversely affect the structural and containment integrity of the casing.
- (h) There are no valves on the casing.
- (i) The casing will not be transported by air.

The above information comes from an internal Engineering Evaluation, that is stamped ECI. I can send it to you if you need it, but it cannot be made publicly available. NNSS WAC is publicly available via NRC ADAMS: ML12194A604.

Thanks,

John

---

**From:** Trefethen, Jean [mailto:Jean.Trefethen@nrc.gov]  
**Sent:** Friday, June 02, 2017 1:36 PM  
**To:** Corrado, Jonathan K <corradojk@centrusenergy.com>  
**Cc:** Wiehle, Kelly L <wiehlekl@centrusenergy.com>; Faraz, Yawar <Yawar.Faraz@nrc.gov>  
**Subject:** RE: centrifuge casings - From ACO 17-0018, enclosure 1, page 3

To help clarify the concern regarding certification of the sealed centrifuge casings – the question raised had to do with the use of these as waste shipping containers and ensuring that they will meet and receive all of the applicable waste packaging certifications in 10 CFR 71 and 40 CFR 173 prior to the waste shipment.

If there is a general statement regarding this in a publically available document you have already provided that would be best – should already be in ADAMS and may already be a reference in the EA. That said we can quickly add another publically available reference to the EA to capture this concern and you should not spend too much extra time trying to find it in previous submittals.

Thank you John!

Jean

---

**From:** Corrado, Jonathan K [mailto:corradojk@centrusenergy.com]  
**Sent:** Friday, June 02, 2017 1:20 PM  
**To:** Trefethen, Jean <Jean.Trefethen@nrc.gov>  
**Cc:** Wiehle, Kelly L <wiehlekl@centrusenergy.com>; Faraz, Yawar <Yawar.Faraz@nrc.gov>  
**Subject:** [External\_Sender] centrifuge casings - From ACO 17-0018, enclosure 1, page 3

Type of Solid Radwaste	Radionuclides Present
Sealed centrifuge casings filled with centrifuge internal components, other contaminated cascade component, and possible dry active waste to fill voids	UF <sub>6</sub> , UF <sub>4</sub> , UO <sub>2</sub> F <sub>2</sub> , oxides, metals, and other compounds may be present. Each container is expected to contain less than 1,000 g of uranium and less than 15 g of U <sup>235</sup> .
IFT containers filled with sectioned service modules, other contaminated cascade components, and possible dry active waste to fill voids	
B-25 containers filled with the centrifuge assemblies other than the casing/internals, remaining parts from the cascade, and possible dry active waste	

--	--

Class A solid radwaste is estimated to be approximately 180,000 ft<sup>3</sup>. No Class B, C, or Greater than Class C solid radwaste is anticipated to be generated during the Lead Cascade decommissioning efforts.

Section 9.2.2.3.3 of the Lead Cascade License Application details the current storage capabilities and commitments. These storage requirements are flowed into currently approved operating procedures. Additional classified matter storage requirements are documented within Chapter 2.0 of the Security Program and applicable security plans.

Process equipment will be dismantled and handled as contaminated waste. The waste will be consolidated and containerized to minimize the volume. Containers with access closures installed will be stored in a Security approved interim staging area until ready for shipment. Waste can be shipped from any Lead Cascade facility as necessary. Approved waste handling methods will be utilized to ensure that safety, security, and regulatory requirements are maintained.

The solid radioactive waste removed from the Lead Cascade will be handled and packaged in accordance with Section 9.2.2.3 of the Lead Cascade License Application and activities will be performed in accordance with currently approved operating procedures and/or new procedures developed in accordance with Section 11.4 of the Lead Cascade License Application. Additional handling and packaging requirements may be augmented by the disposal facility selected for final processing.

Additionally, the Lead Cascade does not currently have any volumetrically contaminated solid radwaste and does not expect to generate any during the decommissioning activities.