

Comanche Peak Nuclear Power Plant Units 3 and 4

Byproduct Material Possessed or Used
by CPNPP Units 3 and 4 Prior to Initial Fuel Load

Revision 1

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10 CFR § 30.35(a)(1) Financial assurance and recordkeeping for decommissioning requires that the quantities of byproduct materials need to be $< 10^5$ times the quantities of byproduct materials found in Appendix B to Part 30. For the US-APWR, the following quantities and types of byproduct material are provided and may be on site prior to initial fuel load:

Type of Equipment	Use of Equipment	Byproduct Source Used	Amount of Byproduct Used (μCi)	Appendix B x 10^5 Limit (μCi)
Calibration Source for NaI Detector - Fuel Shipping Inspection	Calibration Source	Co-60, Cs-137, Ba-132	TBD ⁽¹⁾	Co-60 - 10^5 Cs-137 - 10^6 Ba-132 - 10^4
LLW Inspection Equipment	1) Proofreading radiation measurement equipment 2) Measurement of the upper space drum	Co-60 Cs-137 Co-58 Ba-133	Co-60 - 43.24 Cs-137 - 110.8 Co-58 - 2.70 Ba-133 - 135.1	Co-60 - 10^5 Cs-137 - 10^6 Co-58 - 10^6 Ba-133 - 10^6
Box-type Clearance Equipment	Proofreading radiation measurement equipment	Co-60 Cs-137	Co-60 - 13.51 Cs-137 - 27	Co-60 - 10^5 Cs-137 - 10^6
Tray-type Clearance Equipment	Proofreading radiation measurement equipment	Co-60	2.70	Co-60 - 10^5
Reactor Vessel Surveillance Capsule	Dosimeter	U-238 Np-237	U-238 - 0.004 per capsule Np-237 - 12.51 per capsule (6 capsules per unit)	Mixture of Alpha particle emitters - 10^2
Primary Source Assembly ⁽²⁾	Neutron Source	Cf-252	Approx. 162,000.0 per source assembly (2 assemblies per unit)	Alpha particle emitters - 10^2

⁽¹⁾ This will be similar to the amounts used in the LLW Inspection equipment.

⁽²⁾ The primary source assemblies will not be received on site until the decommissioning funds are in place in accordance with 10 CFR 50.75. Looking at the unity rule established in 30.35(a)(1) for the items above:

Type of Equipment	Unity Rule Equation
LLW Inspection Equipment	$(43.24/1 + 110.8/10 + 2.70/10 + 135.1/10) / 100000 = 6.81 \text{ E-}04 \lllll 1$
Calibration Source for NaI Detector - Fuel Inspection	TBD $\lllll 1$
Box-type Clearance Equipment	$(13.51/1 + 27.0/10) / 100000 = 1.38 \text{ E-}05 \lllll 1$
Tray-type Clearance Equipment	$(2.70/1) / 100000 = 2.7 \text{ E-}05 \lllll 1$
Reactor Vessel Surveillance Capsule	$((0.004/0.01 + 12.51/0.01) / 100000) * (6 \text{ capsules}) = 0.0751 \ll 1$

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As shown in the tables above, CPNPP does not possess or use unsealed byproduct material of half-life greater than 120 days and in quantities exceeding 10^5 times the applicable quantities set forth in appendix B to Part 30, prior to initial fuel load. In addition, for the combination of isotopes, R divided by 10^5 is much less than 1. As such, CPNPP is not required to have a decommissioning funding plan per 10 CFR § 30.35(a)(1).

10 CFR § 30.35(a)(2) requires applicants to put aside decommissioning funds for the authorization to possess and use sealed sources or plated foils of half-lives greater than 120 days and in quantities exceeding 10^{12} times the applicable quantities set forth in appendix B to part 30. No other sealed sources or plated foils with half-lives greater than 120 days other than those listed in the table will be used at CPNPP. Since these quantities were much less than 10^5 times the quantities, they are also much less than 10^{12} the Appendix B quantities. Similarly, because the R divided by 10^5 is much less than 1, the R divided by 10^{12} is also much less than 1. As such, CPNPP Units 3 and 4 is not required to have a decommissioning fund per 10 CFR § 30.35(a)(2).

In summary, based upon the quantities of byproduct material possessed or used by CPNPP Units 3 and 4 prior to initial fuel load, a decommissioning funding plan is not required for Luminant to possess a Part 30 byproduct material license per 10 CFR Part 30. Prior to fuel load, a decommissioning funding plan will be in place for CPNPP Units 3 and 4 per 10 CFR 50.75.