

TENNESSEE VALLEY AUTHORITY

Radiological Health Staff

NO.: LSAP-0007

LABORATORY SERVICES ADMINISTRATIVE PROCEDURE

TITLE: Operation Procedure for Neutron Source

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DATE: 3-9-84

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1.0	<u>Purpose</u>		
1.1	This procedure describes the method of operation for the neutron source located at the Western Area Radiological Laboratory (WARL).		
2.0	<u>Scope</u>		
2.1	This procedure applies to the ²³⁹ PuBe neutron source located at WARL.		
2.2	Conformance		
2.2.1	Regulations		
2.2.1.1	10 CFR Part 20		
2.2.1.2	TVA		
2.2.1.2.1	By-Product Material License 01-06113-05		
2.2.1.2.2	Special Nuclear Materials License SNM-1102		
2.2.2	Standards		
2.2.2.1	ANSI-N323 Sections 5 and 6		
3.0	References		
3.1	Title 10, Code of Federal Regulations, Part 20, Revised January 1, 1982		
3.2	<u>American National Standard Radiation Protection Instrumentation Test and Calibration</u> , ANSI N323. The Institute of Electrical and Electronics Engineers, Inc., 1978		
3.3	"Operation of the Radiation Calibration Facility at the Western Area Radiological Laboratory," Procedure LSAP-0002, Laboratory Services, TVA, Muscle Shoals, Alabama.		

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4.0	<u>Requirements</u>	
4.1	Material	
4.2	Equipment	
4.3	Prerequisites	
4.3.1	Proper personnel monitoring devices (TLD badge with neutron card) shall be worn at all times when operating this source.	
4.4	Actions and Limitations	
4.4.1	Calibration adjustments to instruments using this source shall not be made when source is exposed.	
4.4.2	Due to the potentially hazardous levels of radiation, adherence to these procedures during routine calibration work is mandatory.	
4.4.3	Any conditions that require deviation from this procedure shall be approved by the proper Health Physics Staff or group prior to performance.	
4.4.4	Adherence to LSAP-0002 (WARL) as applicable is mandatory.	
4.5	Procedure	
	CAUTION	
	Before opening the neutron source door <u>check</u> and be sure neutron beam area is clear.	
4.5.1	Activate the "Source Exposed" light at the door to the neutron room and hang the "Source In Operation" sign across the doorway.	
4.5.2	Set item to be exposed at appropriate position in front of the source to give the dose rate (mRem/hr) desired.	
4.5.3	Open the barred door, raise and lock the neutron source into position with the securing pin.	

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<p>4.5.4 If a long exposure is required and the neutron source is to be left unattended, double check to ensure that the warning light "Source In Operation" is on, and the "Source In Operation" sign is across the doorway to the neutron source room.</p> <p>4.5.5 When finished with the neutron source, ensure the source is in its lowest position and the neutron source door is closed prior to leaving the area. Remove "source in operation" sign.</p> <p>5.0 <u>Quality Assurance</u></p> <p>5.1 Not applicable.</p> <p>6.0 <u>Notes</u></p> <p>6.1 None</p>		