USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

QUALITY ASSURANCE PROGRAM

RESPONSIBILITY

1. The Radiographic Safety Officer will be responsible for establishing and implementing the Quality Assurance Program.

2. The Radiographic Safety Officer will be responsible for insuring that all personnel involved in the program have received the required training and that they receive periodic training on any new material incorporated into the program.

3. The Radiographic Safety Officer will be responsible for insuring that any changes or revisions found to be necessary in the Quality Assurance Program are incorporated into the program.

4. The Radiographic Safety Officer shall insure that all defined QC procedures, engineering procedures and specific provisions of the package design approval are satisfied.

5. The Senior Radiographer will be responsible for the actual performance of the QC operations under the guidance of the Radiographic Safety Officer.

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USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

ORGANIZATION

A. Commanding Officer: The Commanding Officer, USS DIXIE (AD-14), is the licensee for this activity. The Commanding Officer has overall responsibility for matters concerning the licensed radioisotopes.

B. Radiographic Safety Officer: The Radiographic Safety Officer shall be designated in writing by the Commanding Officer of the USS DIXIE (AD-14). The Radiographic Safety Officer shall be a graduate of the Radiographic Safety Officer course A-7K-0017 conducted by the Non-Destructive Testing School, NavSta, San Diego, CA, or course A-4J-0016 conducted by the Naval Nuclear Power Unit, Port Hueneme, CA. The Radiographic Safety Officer shall be responsible for directly supervising the Senior Radiographer in the performance of his duties under this quality assurance procedure.

C. Senior Radiographer: The Senior Radiographer shall be a qualified radiographer designated by the Radiographic Safety Officer as such. The Senior Radiographer will be a graduate of the Radiographic Operator Course A-701-0032. The Senior Radiographer shall be responsible for controlling and directly supervising Radiographic operations conducted by USS DIXIE (AD-14). The Senior Radiographer is directly responsible to the Radiographic Safety Officer for coordination of all receipts, handling, tests and inspections, and transfers of radioactive material and all records of tests/inspections conducted IAW this procedure and NRC License #08-00038-43.

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USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

DOCUMENT CONTROL

A. RESPONSIBLE INDIVIDUAL

1. The Senior Radiographer will be responsible for all requirements of this part.

B. SCOPE OF RESPONSIBILITY

1. The Senior Radiographer shall maintain all pertinent certificates of compliance for the shipping packages used by this activity. These certificates shall be maintained in the files with all other records required by this part.

2. The Senior Radiographer shall be responsible for entering changes to the certificates of compliance immediately upon receipt.

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USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

RECEIVING, HANDLING, STORAGE, AND SHIPMENT

A. PROCEDURES TO BE FOLLOWED UPON RECEIPT OF RADIOACTIVE SHIPMENT.

1. All radioactive materials will be delivered directly to USS DIXIE (AD-14).

2. Immediately upon arrival of the radioactive material the Senior Radiographer will be notified. The Senior Radiographer will cause the following:

a. Monitor the shipping container with a radiation detection instrument to ascertain that the radiation levels do not exceed 200 mr/hr at the surface or 10 mr/hr at one meter.

b. If the above survey indicates that there is excessive radiation present, the container shall be isolated in the radioisotope vault of the NDT Lab, USS DIXIE (AD-14). The shipper, the Naval Nuclear Power Unit, and the Nuclear Regulatory Commission will be notified. A swipe test of the shipping container shall be performed and delivered to the nearest radiac facility.

c. Upon receiving test results that indicate that the shipping container is not contaminated, the shipping container will be inspected for any damage that would impair it's proper functioning.

B. HANDLING OF SHIPPING CONTAINERS.

1. While a shipping container is at this command it shall be handled by the Senior Radiographer or a Radiographer attached to USS DIXIE (AD-14) under the supervision of the Senior Radiographer or the Radiographic Safety Officer.

C. STORAGE OF SHIPPING CONTAINERS ON USS DIXIE (AD-14)

1. While a shipping container is at this command it shall be stored in the radioisotope vault located in compartment B-0207-EL.

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D. PROCEDURES TO BE FOLLOWED FOR THE SHIPMENT OF RADIOACTIVE MATERIAL.

1. Prior to shipment of a radioactive source from this facility, the Senior Radiographer will cause accomplishment of the following:

   a. A leak test shall be performed if a leak test has not been performed in the last six months prior to shipping. The leak test procedure is detailed in NRC License #08-00038-43.

   b. The storage container shall be inspected to ascertain that no damage exists that would preclude it's being used to transport special form radioactive material.

   c. Upon receipt of satisfactory leak test results (if required), the radioactive material will be loaded into the storage container.

   d. A copy of the satisfactory leak test will be included in the shipping container.

   e. The storage container will be monitored with a radiation detection instrument to determine that no exterior surface reading is above 200mr/hr and that no reading at one meter distance is above 10 mr/hr.

2. Using information supplied to him by the Senior Radiographer, the Radiation Safety Officer shall prepared a "Request for Tranfer of Radioactive Material." A sample of this request is included as Appendix A.

3. Upon receipt of the Government Bill of Lading for the shipment of the radioactive shipping container the Senior Radiographer shall:

   a. Affix all required labels to the shipping container.

   b. Notify the transporting carrier that there is a radioactive shipment to be picked up and supply any information needed by the carrier to expedite pick-up.

   c. Make certain that "RADIOACTIVE MATERIAL" signs are available for and affixed to the carrier's vehicle.

   d. Be available at the time appointed for pick-up, and expedite moving of the shipping container from the radioisotope storage vault to the carrier's vehicle.

   e. Make certain that the carrier has signed all of the required documents necessary for the proper pick-up of the shipping container. Deliver all copies of the documents required by the carrier to the carrier's representative.

USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

INSPECTION, TEST, AND OPERATING STATUS

A. INSPECTIONS TO BE PERFORMED PRIOR TO SHIPMENT.

1. The Senior Radiographer shall cause the inspection of the shipping container prior to loading for shipment to be certain that there is no damage that would cause a radiation hazard to be present.

B. TESTS TO BE PERFORMED PRIOR TO SHIPMENT.

1. The Senior Radiographer shall cause a leak test to be performed if a six month interval has passed since the last leak test prior to its being shipped.

C. OPERATING STATUS OF THE EQUIPMENT TO BE SHIPPED.

1. The Senior Radiographer shall cause an operational test on the shipping container to be certain that there is no malfunction.

D. CONFORMANCE TO INSPECTIONS AND TESTS ON EQUIPMENT.

1. The Radiographic Safety Officer will insure that the NRC required inspections and tests are performed.

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USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

CONTROL OF MEASURING AND TEST EQUIPMENT

A. CALIBRATION OF TEST INSTRUMENTS.

1. Each radiation detection instrument that is utilized in this program is calibrated at intervals not to exceed three months by the nearest NAVELEX/ Radiac Repair Facility.

2. Each radiation detection instrument has a label attached bearing the last calibration date and records are maintained to show calibration and servicing dates of all instruments.

B. PERIODIC TESTING OF TEST INSTRUMENTS.

1. Each radiation detection instrument will be tested for proper operation once each month utilizing the procedure given in appendix B.

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USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

QUALITY ASSURANCE RECORDS

A. The Senior Radiographer shall maintain in his files:

1. A signed copy of all leak and swipe test reports submitted to the nearest Radiac Repair Facility.

2. The shipping documents received from the shipper that arrived with the shipping container.

3. A copy of the Government Bill of Lading, signed by the carrier's representative, and any other pertinent documents relative to the shipment of the shipping container.

B. The Radiographic Safety Officer shall maintain in his files:

1. A detailed description of procedures used in the receipt and transfer of a radioactive materials shipping container.

2. A summary of the qualification of the Senior Radiographer.

3. A list of all equipment utilized in the shipment of a radioactive materials shipping container.

4. Copies of all audit reports and any correspondence dealing with the audit of this quality assurance program.

C. Places where the above records are to be maintained:

1. The records of the Senior Radiographer and the Radiographic Safety Officer shall be maintained on board the USS DIXIE (AD-14) in the NDT Lab, compartment B-0207-EL.

2. All quality assurance records will be identified and retrievable.

USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

AUDITS

A. Periodicity of Audits.

1. The audits of the Quality Assurance program set forth in this procedure shall be conducted not less than once a year.

B. Personnel to conduct the audit.

1. The audits specified by this procedure shall be performed by an auditor having no responsibility in the activity he audits.

C. Areas to be covered in the audit shall include the responsibilities and records of:

1. Radiographic Safety Officer

2. Senior Radiographer

3. Training Activities

4. Record Keeping (general)

5. Compliance to operating and emergency instructions pertaining to compliance with Nuclear Regulatory Commission rules involving receipt, handling, stowage, and transfer of radioactive materials.

6. Compliance to current Quality Assurance program for receipt, handling, stowage, and transfer of radioactive materials.

7. Previous audit reports on file, with replies concerning necessary corrective action.

8. Records of required periodic radiac test instrument calibration.

9. Radiographic equipment/shipping containers, certificates of compliance for containers used and letter of authorization from the Nuclear Regulatory Commission to use the container.

10. Proper receipt and transfer documents.

11. Adequate equipment for conducting swipe/leak tests.

12. Swipe and leak test results signed by a representative of the nearest Radiac Repair Facility.

AUDITS (continued)

D. Personnel to receive copy of audit.

1. The auditor shall send the report of his audit to the Radiographic Safety Officer and a copy to the Senior Radiographer.

E. Reply to audit deficiencies.

1. The Senior Radiographer shall reply in writing to the auditor via the Radiographic Safety Officer concerning any audit deficiency.

F. Maintenance of audit reports.

1. The Radiographic Safety Officer shall maintain a copy of all audit report.

USS DIXIE (AD-14) Quality Assurance Program for Receipt, Handling and Transfer of Special Form Radioactive Material.

APPENDIX A

From: Commanding Officer, USS DIXIE (AD-14)
To: Commanding Officer, Naval Supply Center

Subj: Transfer of Radioactive Material; request for

Ref: (a) Title 10 CFR, NRC Rules and Regulations
(b) Title 49 CFR, DOT Rules and Regulations

1. It is requested that a shipping container containing a radioactive source be shipped to:

Automation Industries
PO Box 245
Phoenixville, Penn. 19460

2. The following information is submitted for the container;

a. Shipping Container - Automation Model SU-500, Ser. No. (_____).
b. Isotope - Iridium-192
c. Source Serial Number - (_____).
d. Source Activity - (_____) Curies.
e. Surface Reading of Container - (_____) mr/hr.
f. Transportation Index - (_____).
g. Transportation Group - II/III.
h. Labeling - YELLOW (_____).
i. Cubic Feet - (_____).
j. Weight - (_____) lbs.

3. The following two statements are required to be on the shipping documents:

"THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION."

"ALL APPLICABLE PROVISIONS OF TITLE 10 CFR, PART 21 HAVE BEEN COMPLIED WITH."

4. When the Government Bill of Lading is ready, please contact ( ) on board USS DIXIE (AD-14) who will pick up GBL and call carrier for pick-up of material.

		A-501 M-1
	Radiac Set AN/PDR-27CY,D,E,F,G H,J,P,Q,R	RATE: MT2 / MAN-HR: 0.2
		TOTAL MAN-HR: 0.2
		ELAPSED TIME: 0.2

MAINTENANCE REQUIREMENT DESCRIPTION

1. Test operate radiac set.

SAFETY PRECAUTIONS

1. Forces afloat comply with Navy Safety Precautions for Forces Afloat, OPNAVINST 5100 series.

TOOLS & PARTS MATERIAL & TEST EQUIPMENT

1. Headphones
2. TS-1189( )/PD Test chamber (nuclear power installation only) (SCAT 6270)
3. MRC R-1 (nuclear power installation only)
4. Yardstick

PROCEDURE

NOTE 1: AN/PDR-27( ) Radiac Sets used in the Navy nuclear power program shall be checked per this requirement with periodicity listed in NAVSHIPS 389-0153, if specified therein.

1. Test Operate Radiac Set.

NOTE 2: This test procedure utilizes natural background radiation. Test sample or test chamber with procedure from technical manuals may be utilized if available.

a. Remove radiac meter from case.

NOTE 3: If batteries check unsatisfactorily, replace the batteries. If batteries check satisfactorily, go to next step. If corrosion is apparent when replacing batteries, turn in the radiac set to the nearest radiac facility for maintenance.

b. Set RANGE switch to BATT COND; meter pointer should deflect to right of center line marked BATT.
c. Set RANGE switch to 0.5.

NOTE 4: AN/PDR-27( ) Radiac Sets used in the Navy nuclear power program shall be checked only per steps 1.i. through 1.w., with periodicity as specified in NAVSHIPS 389-0153. AN/PDR-27( ) Radiac Sets used in all other programs shall be checked only per step 1.d. through 1.k.

d. Connect headphones to radiac set.

	DATE: March 1979	N

MAINTENANCE & REQUIREMENT CARD (MRC)

e. Listen for clicks while observing meter; meter pointer should swing irregularly at low end of scale whenever a click or a group of clicks is heard.
f. Set RANGE switch to 5.0.
g. Listen for clicks while observing meter; meter pointer swing should be greatly reduced from step 1.e., but clicks in headset should continue at same rate.
h. Set RANGE switch to 50.
i. Listen carefully for clicks; clicks may be as slow as 1 every minute or 1 every two minutes, generally there will be no movement of meter pointer.
j. Set RANGE switch to OFF.
k. Return equipment to current readiness condition.
l. Connect headset to radiac set, background clicks should be heard on all positions of RANGE switch.
m. Disconnect headset from radiac set.
n. Set RANGE switch to 50.
o. Place the high range (small cylinder) probe horizontally across the open top of the TS-1189( )/PD. The AN/PDR-27 indication should be within ±20% of the recorded indication on MRC R-1, table 1 for the 50 range.
p. Set RANGE switch to 5.
q. Place yardstick on deck with one end against the outer base ring of TS-1189( )/PD. Position it so that end lines up under the radiation trifoil marker on the radiation warning label.
r. Position the low range (large cylinder) probe with the end flat on the yardstick. Rotate low range probe so that it shields the high range probe from the TS-1189( )/PD test chamber.
s. Place the low range (large cylinder) probe at the distance recorded on MRC R-1 table 1 for the 5 range; AN/PDR-27 should indicate ± 10.8 mR/h.
t. Set RANGE switch to 0.5.
u. Place the low range (large cylinder) probe at the distance recorded on MRC R-1 table 1 for the 0.5 range; AN/PDR-27 should indicate 0.4 ±0.08 mR/h.
v. Set RANGE switch to OFF.
w. Return TS-1189( )/PD and AN/PDR-27 to current readiness condition.