



720665

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) REQUEST

NRC FOIA REQUEST NUMBER(S)

FOIA - 92-76

RESPONSE TYPE

FINAL

PARTIAL

DATE

MAR 13 1992

DOCKET NUMBER(S) (if applicable)

REQUESTER

Ken Olsen

PART I. - AGENCY RECORDS RELEASED OR NOT LOCATED (See checked boxes)

No agency records subject to the request have been located.

No additional agency records subject to the request have been located.

Requested records are available through another public distribution program. See Comments section.

Agency records subject to the request that are identified in Appendix(es) _____ are already available for public inspection and copying at the NRC Public Document Room, 2120 L Street, N.W., Washington, DC.

Agency records subject to the request that are identified in Appendix(es) A are being made available for public inspection and copying at the NRC Public Document Room, 2120 L Street, N.W., Washington, DC, in a folder under this FOIA number.

The nonproprietary version of the proposal(s) that you agreed to accept in a telephone conversation with a member of my staff is now being made available for public inspection and copying at the NRC Public Document Room, 2120 L Street, N.W., Washington, DC, in a folder under this FOIA number.

Agency records subject to the request that are identified in Appendix(es) _____ may be inspected and copied at the NRC Local Public Document Room identified in the Comments section.

Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 2120 L Street, N.W., Washington, DC.

Agency records subject to the request are enclosed. [Appendix A documents are enclosed.]

Records subject to the request have been referred to another Federal agency(ies) for review and direct response to you.

Fees

You will be billed by the NRC for fees totaling \$ _____

You will receive a refund from the NRC in the amount of \$ _____

In view of NRC's response to this request, no further action is being taken on appeal letter dated _____, NC _____

PART II. A - INFORMATION WITHHELD FROM PUBLIC DISCLOSURE

Certain information in the requested records is being withheld from public disclosure pursuant to the exemptions described in and for the reasons stated in Part II, B, C, and D. Any released portions of the documents for which only part of the record is being withheld are being made available for public inspection and copying in the NRC Public Document Room, 2120 L Street, N.W., Washington, DC in a folder under this FOIA number.

COMMENTS

SIGNATURE, DIRECTOR, DIVISION OF FREEDOM OF INFORMATION AND PUBLICATIONS SERVICES

Barrie H. Brumley

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PDR FOIA
OLSEN92-76 PDR

RECORDS BEING PLACED IN THE NRC PDR

<u>Number</u>	<u>DATE</u>	<u>SUBJECT</u>
1.	Sep '88	To J. Shepherd & Ass., subj: Professional Environmental Services <u>3 pages</u>
2.	9/27/88	To R. Verellen, Dept. of Social and Health Services, from Dr. B. Srinivasan, Washington State Univ., subj: Upgrading ^{60}Co gamma irradiation facility at the Nuclear Radiation Center - <u>3 pages</u>
3.	9/29/88	Report on the Receipt of 8049 Curies of Sealed Sources of ^{60}Co at Washington State University on September 29, 1988 - Author: B. Srinivasan (Note: Report completed 11/4/88) <u>14 pages</u>
4.	7/28/87	Report to Northrop Corp., subj: Special Form Testing of USN 368 and AECL C-132 Capsules - Author: J. Shepherd - <u>2 pages</u>
5.	7/28/87	Special Form Certification to Northrop Corporation, Aircraft Division, subj: USN type 368 and AECL type C-132 Capsules - Author: J. Shepherd <u>1 page</u>
6.	5/4/85	Survey Record - <u>1 page</u>
7.	9/14/88	To Radiation Safety Office, from Marshall Scott, Washington State Univ., subj: ^{60}Co Sources - <u>1 page</u>
8.	9/23/88	To J. Shepherd & Assoc., from T. Tillinghast, subj: listed sources that have been smeared - <u>1 page</u>
9.	9/23/88	To J. Shepherd & Assoc., from T. Tillinghast, subj: listed sources that have been smeared - <u>1 page</u>
10.	11/9/88	Ltr from T. Strong, Dept. of Social and Health Services, to Robert Smith, Washington State University, subj: request to cease the manufacture and distribution gas chromatographs, etc. <u>2 pages</u>
11.	11/14/88	Ltr from J. Shepherd, to M. Scott, Washington State University, subj: 5000Ci source meets ANSI specification - <u>1 page</u>
12.	11/15/88	Memo from W. Wilson, Washington State University, to Harry North, NRC, subj: copies of requested information - <u>1 copy</u>
13.	11/16/88	Morning Report - subj: State of Washington Confirmatory Order - <u>1 page</u>
14.	11/18/88	Memo from W. Wilson, Washington State University, to Harry North, NRC, subj: additional documentation on ^{60}Co - <u>1 page</u>

RECORDS BEING PLACED IN THE NRC PDR

<u>Number</u>	<u>DATE</u>	<u>SUBJECT</u>
15.	11/23/83	Ltr from T. Strong, Dept. of Social and Health Services, to V. Miller, NRC, subject: technical assistance requested in the evaluation of old sealed sources - <u>3 pages</u> plus telecopy transmittal
16.	12/5/88	Memo from Dr. Srinivasan, Radiation Safety Office, Washington State University, to Dr. T. Okita, Radiation Safety Committee, subj: ⁶⁰ Co Fred Miller's memorandum of 12/1/88, to you on the receipt of ⁶⁰ Co sealed sources and my analysis of Mr. Miller's concerns - <u>9 pages</u>
17.	-	NOTICE TO EMPLOYEES (State of Washington) subj: standards for protection against radiation hazards - <u>1 page</u>
18.	2/10/89	Memo from Bill Wilson, Washington State University, to David Barbee, Gary S. Collins and B. Srinivasan, subj: Synopsis of current status of the ⁶⁰ Co source deliveries - <u>2 pages</u>
19.	3/3/89	Ltr from Dr. Robert Smith, Washington State University, to Arden C. Scroggs, Dept. of Social and Health Service, subj: concern about communication and cooperation in the RSO - <u>2 pages</u>
20.	3/10/89	Ltr from W. Wilson, Washington State University, to Alexander Adams, Jr. NRC, subj: Wilson announcing his retirement due to poor health - <u>1 page</u>
	3/9/89	<u>Enclosure</u> : Memo from Bill Wilson, Washington State University, to David Barbee, F.V. Smith & Reactor Safeguards Committee, subj: My retirement and its impact on the Radiation Center - <u>13 pages</u>
21.	4/7/89	Memo from T. Okita, Chairperson, RSC, to Don Elting and the Radiation Safety Office Staff, subj: directing all correspondence through normal channels - <u>1 page</u>
22.	5/16/89	Ltr from V. Miller, State Agreement Program, to T. Strong, Dept. of Social and Health Services, subj: responding to a request on technical assistance on the irradiator sources - <u>1 page</u>
	5/8/89	<u>Enclosure</u> : Memo from C. Miller, NRC, to V. Miller, State Agreements Program, subj: State Licensed Byproduct Material in a Research Reactor Pool - <u>2 pages</u>
	12/15/88	Memo from R. Cunningham, NRC, to V. Miller, State Agreements Program, subj: Request from Washington Regarding Evaluation of Irradiator Sources - <u>2 pages</u>
	8/18/88	Memo from D. Crutchfield, NRC, to S. Ebnetter, etal, subj: License Condition for Byproduct Material to be Irradiated in a non-power Reactor <u>2 pages</u>

RECORDS BEING PLACED IN THE NRC PDR

<u>Number</u>	<u>DATE</u>	<u>SUBJECT</u>
	3/3/88	Memo from D. Crutchfield, NRC, to F. Congel, RI, subject: Regulatory Responsibilities for Byproduct materials in Non-Power Reactors - <u>2 pages</u>
23.	6/15/89	Ltr from R. Scarano, RV, to W. Wilson, Washington State University, subj: NRC Inspection - <u>1 page</u> <u>Enclosure:</u> Inspection conducted by North, Johnson, Garcia, RV, May 24-26, 1989 - Inspection Report 50-27/89-01, Docket 50-27, License R-76 - <u>7 pages</u>

To: J. L. Shepherd & Associates
1010 Arroyo Street
San Fernando, California 91340
(818) 898-2361

For: Professional Environmental Services

SCOPE OF WORK

1. Relocate 24 Northrop ⁶⁰Co sources from J. L. Shepherd's facility in San Fernando, California to the Washington State University's (WSU) Nuclear Radiation facility in Pullman, Washington (Suspense Date: 30 September 1988).
2. Prepare additional 5000 Ci ⁶⁰Co source for WSU as specified in Attachment 1. Relocate this source from General Electric's Nuclear Center (Pleasanton, California) to WSU's Nuclear Radiation facility in Pullman, WA (Suspense Date: 30 September 1988).

SPECIFICATION OF TASKS

1. Quality Assurance/Certifications for Source Tests and Transfers.
 - A. Contractor will obtain the following documentation at the stages of the relocation process listed below:
 - a. Prior to shipment from J. L. Shepherd's facility (San Fernando, California):
 - i) Cask Certification
 - ii) Overpack Certification
 - iii) Removable Contamination Survey Results - Cask Exterior
 - iv) Shipping Papers/Shipper Certification
 - v) Exclusive Use Vehicle Survey/Driver Instructions (if needed)
 - b. Prior to shipment from General Electric's Nuclear Center (Pleasanton, CA) to Washington State University (Pullman, WA):
 - i) Special Form Certification (new 5K Ci source)
 - ii) Leak/Wipe Test Certifications (all sources)
 - iii) Removable Contamination Survey Results - Cask Interior

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- iv) Removable Contamination Survey Results -
Cask Exterior (just prior to placement in
overpack)
 - v) Shipping Papers/Shipper Certification
 - vi) Exclusive Use Vehicle Survey/Driver Instruc-
tions (if needed)
 - c. Prior to WSU's placement of sources into their
nuclear pool:
 - i) Shipping Papers/Shipper Certification
(signed receipts)
 - ii) Pool Water Activity Results
 - d. After WSU's placement of sources into their nuclear
pool:
 - i) Pool Water Activity Results
- B. Quality Assurance (QA) documentation will be provided to
Northrop Corporation (Attention: Gary F. Serio, Direc-
tor-Environmental Management) no later than 10 September
1988.

2. Shipment of Sources

- A. Sources will be shipped in two phases:
- Phase I -- The Shepherd facility (San Fernando, CA)
to GE Nuclear Center (Pleasanton, CA)
during the week of 12 September 1988.
- Phase II -- GE Nuclear Center (Pleasanton, CA)
to WSU Nuclear Radiation Center (Pullman, WA)
during the week of 19 September 1988.
- B. Sources will be shipped in compliance with all federal,
state, and local regulations (e.g., DOT, NRC, etc.)
- C. Shipment of sources will be conducted in the most direct
manner available. Exclusive shipment will be utilized if
possible (Preferred route in Phase I shipment is I-5(N)
-- I-580(W) -- Hwy. 84(S); Phase II route is I-5(N) --
I-84(E) -- I-82(E) -- I-395(N) -- Hwy. 26(E)).
- D. Transportation companies will meet applicable regulations
to transport radioactive materials (⁶⁰Co = 9000 Ci).
Vehicles will be properly marked according to DOT speci-
fications.

- September 1988
- E. Transportation carrier will have a minimum of \$1M in liability insurance.
 - F. Contractor will ensure shipping receipts for all sources are signed by General Electric and WSU officials and returned to Northrop Corporation no later than 30 September 1988.
 - G. Contractor will alert Northrop Corporation immediately in the event a deviation from the planned schedule of transportation route occurs.

3. Contingency Plan

- A. Contractor will develop contingency plan in the event any of the Northrop ⁶⁰Co sources is tested and found to be leaking.
- B. Northrop will be notified immediately if this contingency plan is enacted.

4. Points of Contact

- A. Northrop Corporation
One Northrop Avenue (Org. 128/52)
Hawthorne, CA 90250
Attn: Norman L. Sealander
(213) 332-1255
Alternate Contact: George Cozens (Org. 135/65)
(213) 332-1415
- B. J. L. Shepherd & Associates
1010 Arroyo Street
San Fernando, CA 91340
Attn: Joe Shepherd
(818) 898-2361
- C. General Electric Vallecitos Nuclear Center
Vallecitos Road
Pleasanton, CA 94566
Attn: Tedd Tillinghast
(415) 862-4396
- D. Washington State University
Radiation Safety Office
Nuclear Center
Pullman, WA 99184-1300
Attn: Marshall Scott
(509) 335-7058 or 8641
(Home) (509) 332-4529

September 27, 1988

Mr. Robert Verellen
Department of Social and
Health Services
Radiation Control Section
Thurston Airdustrial Center
Building 5, LE-13
Olympia, WA 98504

Subject: Upgrading ^{60}Co gamma irradiation facility at the
Nuclear Radiation Center

Dear Mr. Verellen:

I am writing this letter as a follow up of our telephone conversation yesterday at which time I informed you that I have resumed the position of Director of the Radiation Safety Office starting September 19, 1988. On September 22, 1988 I was informed that WSU will be receiving a shipment of about 8200 curies of ^{60}Co (sealed sources) from J.L. Shepherd and Associates in California, during the week of September 26. This shipment, I believe, is a gift to WSU from Northrop corporation, General Electric and J.L. Shepherd, all three firms in California, in order to upgrade the ^{60}Co gamma irradiation facility at the Nuclear Radiation Center. You may recall that the present source strength in the facility is about 1200 curies which yields a gamma dose-rate of about 1700 rads/minute in the closest position of irradiation and about 500 rads/minute in the most used position. Many researchers find the available dose-rate to be inadequate and require a stronger source. Hence the need to upgrade the facility.

Mr. Marshall Scott of the Nuclear Radiation Center has been co-coordinating the efforts towards the upgrading work. In the rest of the letter, I will summarize the information provided by him to me during the period September 22-24. Marshall Scott informs me that similar work was performed about 20 years ago when the ^{60}Co irradiation facility was upgraded to a total of about 17,700 curies and he participated in that work. Therefore the planned work now is based upon a successful operation before.

1. WSU will receive 27 individual sources of ^{60}Co all in sealed form amounting to a total activity of 8200 Ci. These are listed below:

- | | | |
|----|-----------------------------------|--------------|
| a. | 12 USNC type 368 sources, | 17 Ci each |
| b. | 12 AECL type C-132 sources, | 75 Ci each |
| c. | 1 AECL stick type source | 1400 Ci each |
| d. | 1 annular type source Model 1099, | 700 Ci each |
| e. | 1 GE source | 5000 Ci each |

A/2
2.

The exact amounts in these sources at the time of receipt will be known when we receive the shipping papers. I presume that the 8200 Ci estimate is likely to be the upper limit of the shipment. Please note that our radioactive materials license WN-C003-1 allows us to possess 20,000 curies of ⁶⁰Co (item 8H).

2. The sources will be shipped from General Electric's Nuclear Center in Pleasanton, CA, to WSU possibly as an exclusive shipment.

3. Upon arrival of the shipment, the cask (about 6000 lbs in weight), containing the sources will be surveyed, with monitors and swipes. The truck used in the shipment will also be surveyed before it is released.

4. The cask will be lowered into the bottom of the pool of the nuclear reactor and the sources removed using "long" tools which reach to the bottom.

5. The sources will be stored at the bottom of the pool until the time they are loaded into a new irradiator assembly. Again Marshall Scott is co-coordinating the work on the design and construction of the irradiator facility. This irradiator will be situated at the bottom of the pool as before. Please note that the new irradiator is expected to have a maximum source strength of about 9400 Ci (i.e. 8200 Ci new + 1200 old) which is about one-half of our possession limit as well as about one-half of the maximum loading of 17,700 Ci of the irradiator 20 years ago.

6. The empty cask will be removed from the pool, monitored, cleaned and monitored (with wipes and instruments) again before return shipment to General Electric.

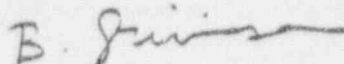
7. The personnel involved in monitoring, and unloading work will wear film badges, ring badges and also pocket dosimeters.

8. Wipes will be counted in the liquid scintillation counter. Instrument surveys will be carried out using the portable monitors available to the reactor operations group.

9. The pool water will be analyzed at the end of 24 hours to verify that the placement of new sealed sources has not contributed to any enhancement to the ⁶⁰Co activity of the pool water. Following this work, pool water will be analyzed once a week for 2 months to ascertain that sources are not leaking. If all results are satisfactory, then pool water analysis will be carried out once in six months as required for testing sealed sources. Note that the maximum activity of ⁶⁰Co in the pool water observed by us in the past is 3.4×10^{-5} μ Ci/ml and typically it is at least 10 to 100 times lower.

Please call me at (509) 335-8916 if you have any questions to be answered by this office in connection with the upgrading the ^{60}Co irradiation facility.
Kind regards.

Sincerely,



Dr. B. Srinivasan
Director, Radiation Safety

BS:jd

cc: Professor T. Okita,
Chairman, Radiation Safety Committee
Professor D. Earbee,
Director, Nuclear Radiation Center