

FEB 19 1985

License No. 37-19123-01  
Docket No. 030-17002  
Control No. 02793

DOC-NCC Service Company  
ATTN: John R. Reynolds  
Radiation Protection Officer  
P.O. Box 235  
Yatesboro, Pennsylvania 16263

Gentlemen:

This is in reference to your application dated August 17, 1984 to renew License Number 37-19123-01. In order to continue our review, we need the following additional information:

1. Please clarify if your Cesium 137, 2 curie sources are used for logging gas wells, and if gas wells are the only type of wells you log with the materials specified in Item 8 A (1) (2) (3) (4).
2. Your application does not address training of other ancillary employees who maybe working in or frequenting any restricted area (e.g., your storage and use areas and temporary job site areas) on a periodic basis. The NRC recommends that such individuals be given instruction in basic radiation safety principles and your own radiation safety program at least annually. Please verify, that such individuals will be trained.
3. Regarding your radiation detection instruments; please confirm, that they will also be calibrated after each servicing or repair and that calibration records for each survey instrument will be maintained for a period of two (2) years from date of calibration for inspection by the Commission.
4. Regarding your Radiation Safety Program (Item 15 of your application);
  - a. You must agree not to perform well-logging service operations with a sealed source(s) in any well or wellbore unless, prior to commencement of the operation, you have a written agreement with the well operator, well owner, drilling contractor, or land owner that:
    - (1) In the event a sealed source is lodged downhole, a reasonable effort at recovery will be made.
    - (2) In the event a decision is made to abandon the sealed source downhole, the requirements of 30.56, 10 CFR 30 and all of the procedures indicated in Attachment A of this letter are met.

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We note that the section of your Radiation Safety Program entitled "Lost Sources Procedure" does cover some of the requirements of 10 CFR 30.56 but some points were omitted.

Additionally you did not indicate whether you would perform your own source retrieval or obtain a "fishing" service company to perform this service.

- b. Please clarify the radiation level you are accepting in the drivers compartment and at 18 inches from your truck surfaces. In order to meet the NRC's transportation requirements in 10 CFR 71 and dose limits in 20.105 of 10 CFR 20, the levels should be 2 millirem in any one hour or less in the unrestricted areas.
- c. Please confirm that leak testing of your sealed sources is performed at intervals not to exceed 6 months.
- d. You have not specified Inspection and Maintenance procedures for your logs in your Radiation Safety Program. A program acceptable to the NRC includes the following:
  - (1) Conduction at intervals not to exceed six months, a program of inspection and maintenance of source holders, logging tools, source handling tools, storage containers, transport containers, and injections tools to assure proper labeling and physical condition. Records of inspection and maintenance shall be maintained for a period of two years for inspection by the Commission.
  - (2) If any inspection conducted pursuant to the above reveals damage to labeling or components critical to radiation safety, the device shall be removed from service until repairs have been made and that ...
  - (3) The repair, opening, or modification of any sealed source, or the non-routine servicing\* and maintenance of equipment such as the removal of source capsules from source holders, repair and replacement of seals on source holder/pressure housings, etc. shall be performed only by persons specifically authorized to do so by the U. S. Nuclear Regulatory Commission or an Agreement State.

NOTE: If you wish to request authorization to perform such non-routine services as indicated in (3) above, you will need to describe the specific services you wish to perform and provide step-by-step procedures for the performance of these non-routine services, including a description of any special tools that will be used to minimize personnel exposure. Sources and source holder/pressure housings should never be handled with the bare hands. You are reminded that where specific approval for non-routine servicing of source holders or pressure housings

containing the source have not been requested and subsequently granted under the license, you will be required to return the items to the device manufacturer or other persons specifically licensed to perform such non-routine services.

Please provide procedures for Inspection and Maintenance. These procedures should also be part of your Operating and Emergency procedures.

- e. You have not indicated that individuals other than those named in item 6 will be permitted to assist in the handling of sources. Please clarify if you intend to have assistants, if so, you should not permit the handling of sources by these assistants until they have
  - (1) Read or received instruction in your operating and emergency procedures and demonstrated an understanding thereof.
  - (2) Demonstrated competence to use, under the personal supervision of the logging supervisor, the sources of radiation, related handling tools and radiation survey instruments which will be used on the job.
- f. You have not indicated what documents will be available for inspection by the NRC, when you are conducting operations at temporary jobsites. The NRC requires that the following documents and records be available at the site:
  - (1) Operating and emergency procedures.
  - (2) Survey records for the period of operation at the site.
  - (3) Evidence of current calibration for the radiation survey instruments in use at the site.
  - (4) When operating in an Agreement State under reciprocity, a copy of your NRC license.

Please confirm the above records will be available at your temporary job sites.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 02793.

Sincerely,

Original Signed By  
Jenny M. Johansen

Jenny M. Johansen, M.S.  
Nuclear Materials Safety Section B  
Division of Radiation Safety  
and Safeguards

Enclosures:  
10 CFR Parts 19, 20, 30 and 170

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ATTACHMENT A

NOTIFICATION

(Notification of Incidents, Abandonment, and Lost Sources)

You must agree to abide by the notification procedures and precautions outlined in (a) through (e) below:

- (a) Notification of incidents and sources lost in other than downhole logging operations shall be made in accordance with appropriate provisions of Sections 20.403 and 20.405, 10 CFR 20.
- (b) Whenever a sealed source or device containing radioactive material is lodged downhole you shall:
  - 1. Provide the drill rig operator and the fishing service company with a complete description of the tool and the location of the source in the tool.
  - 2. Advise the drill rig operator and fishing service company against using any fishing techniques which may damage the source in the tool.
  - 3. Continuously monitor the wellhead and any well circulating fluids (drilling mud, etc.) during all fishing operations to check for any surface contamination resulting from downhole source damage. This monitoring should be accomplished utilizing a sensitive beta-gamma survey meter. The sensitive gamma scintillation detector that is contained in a well-logging tool may also be used and may be preferable for this surface contamination monitoring. Any instrument readings above background should be considered evidence of source damage. A recent accident in Pennsylvania involving Americium could not be adequately detected using a beta-gamma survey meter. Since you will use Am-241/Be logs you should have access to a thin end-window probe to monitor for alpha contamination.
  - 4. In the event of any evidence of downhole source damage, immediately notify the drill rig operator and fishing service company to cease all operations, restrict the flow of drilling fluids through the downhole fluid circulatory system, and make attempts to separately isolate and contain the fluids coming from the wellhead. The well-logger should also notify the Radiation Protection Officer who should then immediately notify the nearest NRC Regional Office listed in Appendix D, 10 CFR 20, of the situation.
- (c) When it becomes apparent that efforts to recover the radioactive source will not be successful, you shall:
  - 1. Advise the well-operator of requirements for abandonment and an appropriate method of abandonment, which shall include:

- (i) The immobilization and sealing in place of the radioactive source with a cement plug.
  - (ii) The setting of a whipstock or other deflection device.
  - (iii) The mounting of a permanent identification plaque, at the surface of the well, containing the appropriate information required by (d) below.
2. Notify the appropriate Region listed in Appendix D, 10 CFR 20, by telephone, giving the circumstances of the loss, and request approval of the proposed abandonment procedures.
3. File a written report with the Region with a copy to the appropriate State Agency responsible for well drilling operations within 30 days of the abandonment, setting forth the following information:
- (i) Date of occurrence and a brief description of attempt to recover the source.
  - (ii) A description of the radioactive source involved, including radionuclide, quantity, and chemical and physical form.
  - (iii) Surface location and identification of well.
  - (iv) Results of efforts to immobilize and set the source in place.
  - (v) Depth of the radioactive source.
  - (vi) Depth of the top of the cement plug.
  - (vii) Depth of the well.
  - (viii) Information contained on the permanent identification plaque.
- (d) Whenever a sealed source containing radioactive material is abandoned downhole, you shall provide a permanent plaque for posting the well or wellbore. This plaque shall:
- 1. Be constructed of long-lasting material, such as stainless steel or monel.
  - 2. Contain the following information engraved on its face:
    - (i) The word "CAUTION".
    - (ii) The radiation symbol without the conventional color requirement.
    - (iii) The date of abandonment.

- (iv) The name of the well operator or well owner.
  - (v) The well name and well identification number(s) or other designation.
  - (vi) The sealed source(s) by radionuclide and quantity of activity.
  - (vii) The source depth and the depth to the top of the plug.
  - (viii) An appropriate warning, depending on the specific circumstances of each abandonment. (Note that appropriate warnings may include: (a) "Do not drill below plug back depth;" (b) "Do not enlarge casing;" or (c) "Do not reenter the hole," followed by the words, "before contacting the Nuclear Regulatory Commission.")
- (e) You shall immediately notify the agency by telephone and subsequently by confirming letter if you know of, or have reason to believe that, radioactive material has been lost in, or to an underground potable water source. Such notice shall designate the well location and shall describe the magnitude and extent of loss of radioactive material, assess the consequences of such loss, and explain efforts planned or being taken to mitigate these consequences.