

# NIGERIAN NUCLEAR REGULATORY AUTHORITY

## REQUIREMENTS FOR NOTIFICATION OF INCIDENTS, ABANDONMENT AND LOST SOURCES

81 (1) Notification shall be made of radiation incidents and radioactive sources lost in other than downhole logging operations.

(2) Whenever a sealed source or device containing radioactive material is lodged downhole, the licensee shall:

(a) Notify the NNRA immediately;

(b) Monitor at the surface for the presence of radioactive contamination with a radiation survey instrument or logging tool during logging tool recovery operations; and

(c) Notify the Authority immediately by telephone or e-mail if radioactive contamination is detected at the surface or if the source appears to be damaged.

(3) When it becomes apparent that efforts to recover the radioactive source will not be successful, the Well-Owner shall:

(a) Advise the Source-Owner and the Authority of an appropriate method of abandonment, which shall include:

1. The immobilization and sealing in place of the radioactive source with a cement plug,
2. The setting of a whipstock or other deflection device, and
3. The mounting of a permanent identification plaque, at the surface of the well, containing the appropriate information required by this section;

(b) Notify the Authority by telephone or email, fax or letter, giving the circumstances of the loss, and request approval of the proposed abandonment procedures; and

(c) When efforts to recover the radioactive source are not successful, the Well-Owner shall do the following:

i. notify the Authority by telephone, e-mail, fax of the circumstances that resulted in the inability to retrieve the radioactive source and obtain the Authority's approval to implement the abandonment procedures or that the Well-Owner implement abandonment before receiving the Authority's approval because the Well-Owner can demonstrate that

(1) there was an immediate threat to public health and safety

(2) nothing can be done further

(c) File a written report with the Authority within 30 days of the abandonment, setting forth the following information:

1. Date of occurrence and a brief description of attempts to recover the source;
2. A description of the radioactive source involved, including radionuclide, quantity and chemical and physical form;
3. Surface location and identification of well;
4. Results of efforts to immobilize and set the source in place;
5. Depth of the lodged radioactive source;
6. Depth of the top of the cement plug;
7. Depth of the well; and
8. Information contained on the permanent identification plaque.

- (4) Whenever a sealed source containing radioactive material is abandoned downhole, the Well-Owner shall provide a permanent plaque, as described below, for posting the well or well-bore. This plaque shall:
- (a) Be constructed of long-lasting material, such as stainless steel or monel, and
  - (b) Contain the following information engraved on its face:
    - 1. The word "CAUTION";
    - 2. The radiation symbol without the conventional color requirement;
    - 3. The date of abandonment;
    - 4. The name of the well operator or well owner;
    - 5. The well name and well identification numbers or other designation;
    - 6. The sealed sources by radionuclide and quantity of activity;
    - 7. The source depth and the depth to the top of the plug; and
    - 8. An appropriate warning, depending on the specific circumstances of each abandonment which may include:
      - a. "DO NOT DRILL BELOW PLUG-BACK DEPTH";
      - b. "DO NOT ENLARGE CASING"; or
      - c. "DO NOT REENTER THE WELLBORE TO THE SOURCE POSITION", followed by the words, "before contacting the Authority ".
- (5) The Source-Owner shall immediately notify the Authority by telephone or e-mail, and subsequently by confirming letter, if the licensee knows or has 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.
- (6) In order to learn from the incident situations that have occurred within the organization or elsewhere, and to report back the lessons learned so as to improve equipment, operating procedures and emergency plans, reports of any incident or accidents shall be prepared by the Radiation Safety Officer with the assistance of a Radiation Safety Adviser and the reports shall be submitted to the Authority.
- (7) At each stage of the abandonment, the Source-owner shall notify the Authority accordingly.

In addition you are to:

- i. Fill the standard NNRA Application for Authorization Form and list the radioactive sources to be abandoned
- ii. Pay authorization fee of Two Million Naira Only (N2,000,000.00) in respect of Nigerian Nuclear Regulatory Authority by e-payment or in Bank Draft
- iii. Note that the NNRA shall witness the abandonment process

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