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PROPOSED RULE PR-19,20,21 et al (60)  
(50 FR 13797)

July 11, 1985

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OFFICE  
DOCKETING SERVICE  
BRANCH

Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Docketing and Service Branch

Re: Proposed Licenses and Radiation Safety Requirements for Well Logging  
Operations (10CFR39)

Gentlemen:

When the subject of governmental regulations is at hand, there appears to be an atmosphere of apathy between the regulated and the regulators. In fairness, a spirit of cooperation is often extended by bureaucratic regulators and an acquiescence is demonstrated by the regulated in the interest of getting on with the job at hand. Nevertheless, the great majority of people affected by these joint actions, the general public, seem not to be thought of or taken into account.

Regulators in government exist to maintain the health, safety, and well-being of the general public. That is their mandate by law. Those who are regulated have a natural desire not to operate in an unsafe manner; if not from altruism, then due to the consideration of financial liability. It behooves the generator of regulations to be conscious of the need to repress the temptation to over regulate. Any regulation adds materially to the public burden. Not only are the expenses of complying passed on by the regulated to the public (its customers), but the cost of policing the regulated by government is also added to governmental burden borne by the public.

To a commercial or industrial firm, a regulation is psychologically allied with interference. The American democracy is formulated on the principles of self-government and those governed rely on their representatives, the regulators, to apply restraint without oppression and that only to the point of providing adequate safeguards to protect the public.

Application of the principle of minimum (adequate) restraint gives rise to the following revisions suggested in the attached proposed NRC regulation-  
Part 39 - Licenses and Radiation Safety Requirements for Well-Logging  
Operations.

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add Anthony R Tse, 113035

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General Office  
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Item 1.

Paragraph 39.2 Definitions. Next to final paragraph:

Insofar as is known, uranium sinker bars are no longer used in the well logging industry, and radioactive iron nails are not used by well loggers. Radioactive markers is, however, a category to be retained, and R/A nails (if used) would fall into this category.

Item 2.

Paragraph 39.13(b) Specific Licenses....

This section appears to duplicate, in part, the whole Subpart D; Section 39.61 Training in Particular.

Item 3.

Paragraph 39.15 Requirements for an agreement....

The specifications of the written agreement are unnecessarily wordy. Although the context of this section is agreeable as a statement of condition for well logging, it could be worded more simply; i.e., "In the event a sealed radioactive source is lost or lodged downhole, a reasonable attempt at recovery will be made. In the event a decision is made to abandon the sealed radioactive source downhole, the applicable federal (or state) requirements shall be met." Thus, the requirements themselves may be stated in the Rules with the added clause, "...the well owner or operator shall comply with the terms set forth in Paragraph 39.15 of 10CFR39".

Item 4.

Paragraph 39.41 Design and Performance criteria....

The detailed testing criteria does not differ in any material aspect from the criteria existing with American National Standards Institute (ANSI) N542. Since this is a recognized resource for standards in many industries and branches of government, it would be just as effective and less chance for future error if the statement could read, for example in Paragraph (4): "It meets the following performance requirements by prototype testing to criteria specified for well logging sources by American National Standard (ANSI) N542".

Item 5.

Paragraph 39.35(d) (2) Leak testing of sealed sources.

Filing a report giving full test results, the circumstances of leakage, and corrective action within five (5) days appears unrealistic. Unless the circumstances of leakage and its effects constitute a public hazard, leakage is best handled through an expeditious, rapid response procedural stance which may take only hours to control, but several days or weeks to investigate. A telecom notification contact is an operable approach to either event and quicker than a five day report, but it is suggested the written report could be extended to 14 days minimum.

Item 6.

Paragraph 39.43 Inspection, maintenance....

In Sub-Paragraph (a) the degree or extent of inspection is not prescribed. Some confusion could be removed by adding the word "visually" such that the first sentence reads, "Each licensee shall visually inspect the source holders....".

In Sub-Paragraph (b) it should be noted that some sinker bars are not radioactive, and they need not be labeled.

Item 7.

Paragraph 39.51 Use of a sealed source in a well....

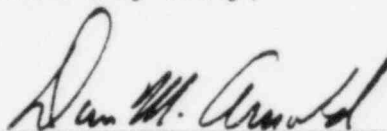
Many shallow wells are drilled as 'core holes' and 'shot holes' during geophysical prospecting for oil. Few of these have casing set below 30 feet in depth. Drilling operators are governed by Water Quality Control Boards in most states which provide a statement of prohibition in protecting aquifer zones and drilling permits are granted only with this understanding. Duality of approvals (including the Commission) would appear to inhibit and risk contradiction in an area best known to the State Board responsible.

Item 8.

Paragraph 39.61 Training....

About one-third of field employees require some degree of training in source handling, maintenance, storage, etc. Requiring 40 hours training for supervisors appears to assume that time in class is of more importance than assimilation of instruction given. Adequate training and instruction along the proposed subjects can be best judged by inspection of performance and demonstrated knowledge. A set 40 hours of classroom instruction may be an unnecessary burden and less adequate than a mixture of classroom instruction and field training.

Yours very truly,



Dan M. Arnold  
Vice President  
Research and Engineering

DMA:jn

Attachment: Proposed Rules...NRC

cc: J. W. Pickering  
G. A. Riddle

# Proposed Rules

Federal Register

Vol. 50, No. 67

Monday, April 8, 1985

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

## NUCLEAR REGULATORY COMMISSION

10 CFR Parts 19, 20, 21, 30, 39, 40, 51, 70, 71, and 150

### Licenses and Radiation Safety Requirements for Well-Logging Operations

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Proposed rule.

**SUMMARY:** The Nuclear Regulatory Commission is proposing a regulation that would specify radiation safety requirements for the use of licensed material in well-logging operations. The proposed regulation would provide: (1) Comprehensive and consistent regulations applicable to well-logging operations by consolidating essential radiation safety requirements in a new Part 39; (2) uniform safety requirements in NRC and Agreement States regulations; and (3) safety requirements designed to reduce the risks of accidents involving the rupture of radioactive sources in well-logging operations.

**DATE:** Submit comments by July 8, 1985. Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given except as to comments received on or before this date.

**ADDRESSES:** Submit written comments to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Branch. Copies of comments received on the proposed rule may be examined at the NRC Public Document Room, 1717 H Street NW., Washington, DC. Single copies of the technical documents referred to in this document may be obtained from Dr. Anthony N. Tse, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555 (301-443-7901).

**FOR FURTHER INFORMATION CONTACT:** Dr. Anthony N. Tse, Office of Nuclear Regulatory Research, U.S. Nuclear

Regulatory Commission, Washington, DC 20555, (301) 443-7901.

### SUPPLEMENTARY INFORMATION:

#### 1. Introduction

#### *Uses of Licensed Material in Well-Logging Operations*

The oil and gas industry often needs to determine the types and characteristics of the underground formations in a new or existing well. Licensed materials are used to obtain information on certain properties of an underground formation, such as type of rocks, porosity, hydrocarbon content, and density. Licensed materials are also used for similar purposes in coal or mineral exploration.

In well-logging, sealed radioactive sources with associated radiation detectors, known as logging tools, are lowered into a well on a wireline. The depth of the well could range from several hundred feet to greater than 30,000 feet. Information collected by the detectors is sent to the surface through the wireline and plotted on a chart as the logging tool is slowly raised from the bottom of the well. Americium-241 (typically 0.25 curie to 20 curies) and cesium-137 (typically 2 to 3 curies) are the radioactive materials most frequently used for this purpose.

In subsurface tracer studies, a small amount of radioactive material in liquid or gaseous form is used. After the liquid or gas tracer is injected into the well, a detector is used in the well to monitor the dispersion of the tracer material. This information will help determine certain underground characteristics such as fluid flow rate and the channeling effect. Iodine-131 (typically 5 to 20 millicuries) is the material most frequently used in subsurface tracer studies.

Other licensed materials used in well-logging operations include cobalt-60 used in collar markers, radioactive iron used in nails, depleted uranium used in sinker bars, and iridium-192 used in sands. Collar markers use Co-60 wire (about 1 to 5 microcuries) to mark collars between two sections of casing and provide positive depth measurement. Radioactive iron nails are used to indicate locations of perforations. Sinker bars are constructed of solid depleted uranium (usually weighing 50 to 100 pounds) and are used to provide additional weight to help push a light weight logging tool

through the drilling fluid, called mud by the drilling industry, down to the bottom of the well. Sands mixed with small amount of iridium-192 are used to determine the extent of underground hydraulic fracturing.

#### *NRC and Agreement States' Roles*

Twenty-seven Agreement States, including most major oil producing States, have assumed responsibility for regulating certain activities, including the use of radioactive materials in well-logging operations, by agreements with the NRC. Each Agreement State issues licenses to persons who use radioactive material in well-logging operations in the State.

The NRC issues licenses to persons using radioactive materials in well-logging operations in non-Agreement States. These licenses specify the radiation safety requirements applicable to well-logging operations that the licensee must follow. The NRC has, as of November 1984, 173 licensees authorized to use radioactive materials in well-logging operations. The Agreement States have approximately 400 licensees involved in well-logging operations.

Well-logging licensees from one State frequently perform well-logging jobs in other States. To avoid duplication of licensing effort, NRC permits, under reciprocity, Agreement States licensees to operate in non-Agreement States according to the conditions of the license issued by their home State. Reciprocity also applies to licensees of the NRC that wish to operate in Agreement States as well as between the different Agreement States. Therefore, compatibility between NRC regulations and Agreement State regulations is essential to permit licensees to conduct well-logging operations in various States while maintaining a consistent and effective level of protection necessary to ensure public health and safety.

#### *NRC's Current Regulatory Practices*

Except for requirements concerning the abandonment of irretrievable well-logging sources set forth in 10 CFR 30.56 and 70.60, current NRC regulations, do not provide radiation safety requirements specific to the use of licensed material in well-logging operations. General safety requirements, however, are contained in 10 CFR Parts



20, 30, 40, and 70. At present, NRC reviews a licensee's specific safety program as part of the license application, and incorporates the safety program into the license as license conditions.

#### *Problems with the Current Practice*

A major problem with the current practice is that radiation safety requirements applicable to the industry are specified as license conditions on a case-by-case basis rather than spelled out in uniform regulations that are applicable to all licensees. This requires duplication of effort and allows for discrepancies in requirements among specific licenses issued by NRC and the Agreement States. Problems in the consistent and uniform application of these requirements could become a greater concern because, under the NRC's program for the decentralization of material licensing actions, well-logging licenses are issued by the five NRC Regional Offices instead of NRC Headquarters.

Though there are about 50,000 well-logging operations each year, the probability of an accident is small. Nonetheless, accidents have occurred and additional safety requirements are needed to reduce even further the risk of an accident.

There were five incidents which occurred between August 1982 and September 1983 involving radioactive sources used in well-logging operations. Three incidents involved the rupture of sources in uncontrolled workshop environments by workers performing machining or drilling operations. Two incidents involved the rupture of sources in well holes during logging-tool recovery operations. The cost associated with the Cleanup of radioactive contamination from these incidents is estimated to be in excess of \$1.5 million.

#### *Actions taken by Agreement States*

Recognizing the need for comprehensive and consistent radiation safety standards, the Conference of Radiation Control Program Directors established a task force in 1974 to develop necessary standards for well-logging operations. The task force was composed of representatives from States, industry, and Federal agencies, including NRC. By 1981, a set of model regulations was proposed to the Conference by the task force. In keeping with previous practices of the organization, the Conference adopted the well-logging requirements as Part W of the "Suggested State Regulations for Control of Radiation." Four Agreement States (Arkansas, Kentucky, Oregon,

and Texas) have already adopted Part W requirements as State regulations without significant changes. Several other Agreement States are considering adopting Part W requirements.

#### *NRC's Proposed Approach*

The NRC is proposing to amend its regulations to include specific radiation safety requirements for well-logging operations. These requirements are included in the proposed 10 CFR Part 39, a new part exclusively dedicated to well-logging operations.

The proposed rule is needed for the following reasons:

(1) The proposed rule would provide comprehensive and consistent regulations applicable to well-logging operations. Current NRC regulations do not provide specific requirements. Specific requirements pertaining to well-logging operations are imposed as licensing conditions.

(2) The proposed rule would incorporate requirements similar to Part W of the Suggested State Regulations. Four Agreement States have adopted Part W as State regulations and others are considering its adoption. Consistency between NRC and Agreement State regulations is essential for well-logging operations because many companies operate in both Agreement and Non-Agreement States.

(3) The proposed rule includes safety requirements designed to reduce the risks of accidents involving the rupture of radioactive sources and the spread of radioactive contamination. These incidents may result from operations conducted to remove a stuck source from a well-logging device or to retrieve a well-logging device lodged in a well.

(4) The proposed rule also includes safety requirements involving the use of radioactive collar markers, uranium sinker bars, and of a sealed source in a well without surface casing.

If these requirements are adopted as final regulations, NRC would encourage the Conference of Radiation Control Program Directors and the Agreement States to adopt similar requirements in order to achieve compatible regulations.

A new part (10 CFR Part 39), dedicated exclusively to well-logging operations, is proposed to specify the various safety requirements. The proposed new part parallels the existing Part 34 which is dedicated exclusively to radiographic operations. A new part is needed because these operations use byproduct material, source material, and special nuclear material. If these safety requirements were not included in one part, they would have to be repeated in Parts 30 (byproduct material), 40 (source material) and 70 (special nuclear

material). For instance, the existing regulation on irretrievable well-logging sources is repeated in Parts 30 and 70 for sources containing byproduct material and special nuclear material, respectively. Furthermore, if the safety requirements were fragmented throughout Parts 30, 40, and 70, licensees, NRC licensing reviewers, and NRC inspectors could have difficulty in determining the regulations applicable to a specific situation.

## **2. Discussion of the Proposed Rule**

The proposed Part 39 would prescribe specific safety requirements for well-logging operations that use licensed materials. General provisions in Parts 30, 40 and 70, such as renewal, amendment or termination of licenses, would also be applicable to well-logging licensees. The following sections provide a discussion of the major provisions of the proposed Part 39.

### *A. Agreement With Well Owner or Operator*

The proposed rule (§ 39.15) would require that a license (a well-logging company) enter into a written agreement with a well owner or operator, whichever engaged the licensee to perform the well-logging operations, before the licensee could use sealed sources in well-logging. The requirement to enter into a written agreement on abandonment procedures for irretrievable well-logging sources was published as a final rule in the *Federal Register* (10 CFR 30.56, 70.60, and 150.20) on August 29, 1983 (48 FR 39036). The proposed Part 39 has incorporated the existing requirement for an agreement and proposes to remove §§ 30.56 and 70.60 and to modify § 150.20.

The proposed rule specifies the terms of this agreement. The well owner or operator would agree, if a sealed source is lodged in the well, to: (1) Make a reasonable effort to recover the sealed source; (2) not permit specific types of recovery operations that could endanger the integrity of the sealed source; (3) not release contaminated equipment or areas, such as areas surrounding the well, for unrestricted use unless the equipment or the area has been decontaminated (Guidance on release of equipment or areas for unrestricted use is available on a case-by-case basis from the NRC staff. In general, limits for equipment are similar to those in Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors."); and (4) implement specified abandonment procedures when a sealed source is deemed irretrievable. The sealed source lodged in the well must be

retrieved or properly abandoned to avoid possible source rupture by subsequent re-entry into the well.

This requirement is needed because the licensee (the well-logging company) may not have the legal authority or resources to recover a tool and its sealed source if it becomes lost in a well. The well owner or operator controls the activities at the well. When a tool containing sealed source is lost in the well, the well owner or operator could engage a "fishing company" to recover it. The fishing company is usually responsible directly to the well owner or operator. The licensed well-logging company has no legal right to direct or control the activity of the fishing company. Therefore, the contractual agreement between the licensee and the well owner or operator is necessary to obligate the well owner or operator to (1) recover the sealed source in a safe manner, (2) properly abandon an irretrievable source, and (3) prevent release of contaminated equipment or areas until they have been decontaminated.

It should be noted that the NRC is making the licensee responsible for the sealed source during well-logging until the sealed source is removed from the temporary jobsite or the completion of the abandonment procedures, if the source is determined to be irretrievable. Thus, NRC is making the licensee responsible for ensuring compliance with the regulations or for pursuing every legal avenue, based on the written agreement, to achieve compliance. The written agreement could assign to the well owner or operator, under the supervision of the licensee in areas of radiation safety, the responsibility for carrying out the recovery operations or abandonment procedures. However, the written agreement could not transfer the possession of the sealed source from one party to another without specific NRC approval.

The Commission considered another approach to allocate responsibility among the various parties involved in the well-logging operations. It would have provided a general license to the well owner or operator, whichever engaged the well-logging company. Under this approach, NRC would have imposed the same safety requirements as would be contained in the written agreement directly on the party that had the authority to fulfill these requirements. This alternative was not pursued for the following reasons:

(1) Current industry practice, of having written agreements between licensees and well owners or operators, has worked satisfactorily for the last 20 years;

(2) The well-logging company is in a better position to handle radiological problems than the well owner or operator, unless the latter's personnel are also properly trained, which would be duplicative and costly;

(3) Licensing well owners or operators as well as well-loggers may create confusion about who is responsible for radiological safety when the sealed source enters or leaves the well.

The Commission is interested in comments on the costs, advantages, and disadvantages of the proposed approach and on the alternative.

#### *B. Radiation Detection Instruments*

The proposed rule (§ 39.33(a)) would require that a licensee have a radiation survey instrument at each field station and at each temporary jobsite. These survey instruments are needed to perform routine radiation surveys and to measure for any potential radioactive contamination. Each survey instrument would have to be capable of measuring 0.1 milliroentgen per hour through at least 100 milliroentgens per hour. The requirement of 10 milliroentgens per hour is proposed because a licensee occasionally needs to define the boundaries of a high radiation area as required by 10 CFR 20.203(c)(2). A grandfather clause (for a period of 5 years) is provided for existing survey instruments capable of measuring 0.1 milliroentgen per hour through at least 20 milliroentgens per hour to reduce the economic impact on licensees. A 5-year period is proposed because the average life of a field-use survey instrument is estimated to be 5 years.

Although the required radiation survey instruments are adequate for routine radiation surveys, they are not designed to handle unlikely events such as the rupture of a sealed source resulting in low-level contamination of americium-241 in the drilling fluid or mud. Therefore, the proposed rule would also require that a licensee have available, when needed, radiation detection instruments (for example, a high range survey meter or a sodium iodide crystal detector) that are capable of measuring radiation levels or contamination levels which could be encountered during an accident. For example, before the initiation of recovery of an americium-241 source from a well, the licensee would have to have an instrument present at the jobsite that is sensitive enough to detect americium-241 contamination. Other types of accidents could also result in high radiation levels; thus, a high range survey meter may be needed. The licensee could own the instrument or

use a consulting service that has such an instrument.

A 6-month calibration interval would be specified for each survey instrument. This interval is adequate, based on licensing experience, to ensure the proper operation of the instrument and is consistent with practices presently required in well-logging licenses.

#### *C. Leak Testing of Sealed Sources*

The proposed rule (§ 39.35) would require that sealed sources be leak tested at least every 6 months. Because these sources are subjected to rough handling and severe environmental conditions in a well, it is necessary that they maintain their integrity. A leaking sealed source, if undetected, could cause extensive radioactive contamination to the well, equipment, personnel, environment. The leak test requirement is consistent with the current requirement for well-loggers and many other types of licensees.

Several exemptions are provided in the proposed rule to reduce the burden of leak testing on the industry. The sealed sources exempted from leak testing requirements are those that would present essentially no hazard to the public or the environment in the event of a leak because they contain either gaseous, short lived, or small quantities of radioactive materials.

#### *D. Physical Inventory*

The proposed rule (§ 39.37) would require that a semi-annual physical inventory be made to account for sources of licensed material. This requirement is needed because the source used in well-logging operations are frequently transported to and from temporary jobsites. An accurate account of each of the sources would ensure that no source has been lost. The 6-month period is proposed because a licensee could conduct a physical inventory and leak testing at the same time, thus, reducing its burdens.

#### *E. Design and Performance Criteria for Sealed Sources*

Design and performance criteria are proposed in § 39.41(a) for all sealed sources except those containing gaseous licensed material. These have been proposed as minimum requirements, and are the same (except for the pressure test) as the requirements for well-logging sources in industry standard ANSI N542, "Sealed Radioactive Sources, Classification," published by the National Bureau of Standards (NBS Handbook 126) in 1978.

However, sealed sources used in well-logging are subject to more severe

environmental conditions, such as high pressure and high temperature. Therefore, several additional requirements are proposed to provide further assurances that, under accident conditions, the source is unlikely to lose its integrity. These requirements would specify that each individual sealed source would have to (1) pass a pressure test; (2) be doubly encapsulated; and (3) contain licensed material in chemical and physical forms which are as insoluble and nondispersible as practical (for example, cesium chloride would not satisfy this requirement because it is soluble in water). A single encapsulated source has a greater change of causing radioactive contamination than a doubly encapsulated source, and soluble or dispersible material from a ruptured source could cause more radioactive contamination than less soluble, less dispersible material. These requirements would (1) phase out the use of substandard sources in well-logging, (2) result in lower probability of source rupture in the well, and (3) mitigate the consequence of contamination in the event of a rupture.

The proposed rule would require that a license not use a new sealed source manufactured after [1 year after the effective date of the final rule] unless it is designed and manufactured in accordance with proposed § 39.41(a). The 1-year grace period is proposed to provide sealed source manufacturers sufficient time to produce sources complying with NRC's requirements.

Sealed sources manufactured before [1 year after the effective date of the final rule] could be used by a licensee until [2 years after the effective date of the final rule]. After this 2-year period, however, these sources could no longer be used unless they were certified, by the manufacturer or other testing organization, as having satisfied the requirements specified in § 39.41(b).

Any source that could not meet the performance criteria proposed in § 39.41(b) would have to be phased out of well-logging. Most sealed sources manufactured after 1978 have complied with the ANSI Standard and there should not be a problem in their ability to comply with the requirements specified in § 39.41(b).

#### *F. Inspection, Maintenance, and Opening of Source or Source Holder*

The proposed rule (§ 39.43(a)) would require that each licensee inspect equipment and tools for obvious defects before the equipment is used each day. Furthermore, paragraph (b) would require that each licensee inspect and maintain equipment and tools at

intervals not to exceed 6 months. The licensee would be required to check the equipment and tools for label legibility and for the absence of physical damage. If any equipment or tools critical to radiation safety were found to be worn or damaged, paragraph (c) would require that the licensee remove them from service until repairs were made.

Paragraph (d) of this section would prohibit the licensee from performing maintenance on a sealed source or a source holder containing a source, unless the licensee has a written instruction approved by NRC. This maintenance may include changing the O-ring on the source holder containing a source or changing the sealed source from one source holder to another source holder. This requirement is needed because the worker is very close to the sealed source during this maintenance, and thus, could receive a significant radiation dose.

This section would also prohibit a licensee from forcing a stuck sealed source out of the source holder or out of the logging tool by operations that could endanger its integrity unless specifically authorized by the NRC. Prohibited operations could include, but would not be limited to: drilling, cutting, or chiseling. These operations would be prohibited because they could accidentally rupture the sealed source and could cause radioactive contamination of the facility, personnel and environment. For similar reasons, a licensee would be prohibited from repairing, opening, or modifying a sealed source unless specifically authorized by NRC to perform these operations.

#### *G. Subsurface Tracer Studies*

Radioactive materials in liquid or gaseous forms and other materials, such as sand labeled with radionuclides, are used as tracer materials in subsurface tracer studies. These materials could accidentally spill on clothing, contaminate hands, be ingested, or, in the case of gaseous or volatile material, be inhaled by personnel. The proposed rule (§ 39.45) would require that protective gloves, clothing, and other equipment be used by individuals who handle tracer materials. When volatile materials such as iodine are handled by employees of licensees who have bioassay requirements incorporated in their licenses in accordance with § 20.108, a bioassay could be required when those employees work in field operations with more than 50 millicuries of I-125 or I-131. A licensee would also be required to maintain the temporary jobsite and the field station free from contamination from licensed materials.

In addition, a licensee would not be allowed to inject any licensed material into a fresh water aquifer as part of a subsurface tracer study unless specifically authorized to do so by the Commission, because the water could be used for human or animal consumption or to irrigate crops.

#### *H. Radioactive Markers*

The proposed rule (§ 39.47) would prohibit the use of radioactive markers (used for determining the depth of a well), unless the radioactivity of each marker, at the time of installation, is less than the quantity specified in § 30.71, Schedule B. This limitation in the amount of radioactivity is necessary because it is impracticable for the licensee that installs the radioactive marker to recover the marker when the well owner or operator removes the well casings from the well at a later date.

#### *I. Uranium Sinker Bars*

The proposed rule (§ 39.49) would require that after [one year from effective date of the final rule] each uranium sinker bar (used as a weight to pull a logging tool toward the bottom of a well) bear a legend: "CAUTION-RADIOACTIVE-DEPLETED URANIUM" and "NOTIFY CIVIL AUTHORITIES (or COMPANY NAME) IF FOUND." This requirement is needed to ensure that, if a uranium sinker bar is lost, someone who finds the bar could identify it as radioactive and would return it to the company. (Because uranium is source material, the licensee must also comply, as necessary, with requirements in 10 CFR Part 40, "Domestic Licensing of Source Materials.")

#### *J. Use of Sealed Source in a Well Without Surface Casing*

The proposed rule (§ 39.51) would prohibit the use of a sealed source in a well without surface casing unless procedures for protecting fresh water aquifer zones are specifically approved by NRC. (A surface casing is a pipe or tube used as lining in the well to isolate the fresh water zone from the well). The purpose of this requirement is to minimize the possibility of contamination of fresh water aquifer zones by accidental rupture of a sealed source. In general, most wells have surface casings to prevent oil or other particulates from entering these zones. However, if surface casings cannot be placed, a licensee may not use a sealed source in an uncased well, unless NRC has specifically approved the licensee's procedures for providing adequate



protection of the fresh water aquifer from radioactive contamination.

Because most uncased wells are primarily encountered in mineral logging, licensees performing mineral logging operations may want to provide specific comments on this requirement, especially on the feasibility of protective alternatives.

#### K. Training

Although general requirements on instruction and training are specified in 10 CFR 19.12 and 30.33(a)(3), the proposed rule (§ 39.61) would establish specific training requirements for logging supervisors and logging assistants. Licensees would be prohibited from permitting an individual to perform well-logging operations unless the individual has been properly trained in accordance with the requirements specified in this section. Training is needed to provide radiation workers with sufficient knowledge and practical experience on radiation safety to ensure safe use of licensed materials. The level of knowledge they would need would depend, of course, on their responsibilities.

For logging supervisors, the proposed rule would require, at a minimum, 40 hours of formal classroom training in the subjects listed under § 39.61(e). Furthermore, it would require that an individual must have, at a minimum, 3 months of on-the-job training. This requirement is needed to ensure that a logging supervisor has sufficient practical experience on radiation safety procedures to handle routine operations and unanticipated emergencies in a safe manner.

Because logging assistants work under the personal supervision of a logging supervisor, their training requirements can be less stringent than those for the logging supervisors. The proposed rule would require that an assistant be instructed on applicable sections of Parts 19, 20, and 21, and on the licensee's operating and emergency procedures. It would also require that the individual be able to use remote tools, survey instruments, etc., to perform work properly under the supervision of the logging supervisor.

The proposed rule would also require that logging supervisors and logging assistants be retained annually after their initial training. This periodic retraining is needed to: (1) Refresh their understanding of basic radiation safety practices, (2) instruct them on any new procedures or on the use of new radiation detection instruments and new tools, and (3) review regulatory requirements or new regulations which may affect their work.

#### L. Operating and Emergency Procedures

The proposed rule (§ 39.63) would require that each licensee develop and follow written procedures for well-logging operations and for dealing with emergencies. These written procedures would also be used as: (1) training materials for instructing logging supervisors and logging assistants, (2) reference materials at a field station and at a temporary jobsite, and (3) supporting documents in licensing applications.

#### M. Personnel Monitoring and Radiation Surveys

The proposed rule (§ 39.65) would require that logging supervisors and logging assistants wear personnel monitoring equipment at all times during the well-logging operation. The requirements in § 39.65 (a), (b), and (c) are specific applications of the existing broader requirements in §§ 20.108, 20.202, and 20.401, respectively. These requirements are repeated in this part because they constitute key features of a radiation protection program.

Similarly, the proposed rule (§ 39.67) would also require that the licensee conduct radiation surveys. This requirement is a specific application of the existing broader requirement in § 20.201, "Surveys." Instead of the 2 years retention for survey records as specified in § 20.401, a 3-year retention period is proposed because the NRC inspection period is every 3 years for well-logging licensees.

If gaseous or volatile tracer materials are used, the licensee may be required to provide bioassay service to individuals handling the tracer materials (§ 39.65(b)). Whether a bioassay is needed depends on the type of radioactive materials and quantity used. For example, Regulatory Guide 8.20, "Applications of Bioassay for I-125 and I-131," states that bioassays should be performed when individuals work in field operations with more than 50 millicuries of I-125 or I-131.

#### N. Contamination Control

The proposed rule (§ 39.69) would require that licensees monitor for radioactive contamination during fishing or source recovery operations, initiate emergency procedures if a sealed source ruptures, and decontaminate any equipment, personnel, or environment that is contaminated. This requirement is needed to assure that any rupture of a sealed source in a well during a fishing operation is detected and reported and that emergency procedures are initiated. Also, paragraph (c) would require that the licensee decontaminate any

contaminated equipment, areas, or personnel. Guidance on release of equipment or areas for unrestricted use is available case-by-case from the NRC. In general, limits similar to those in Regulatory Guide 1.86 should be met. The licensee may perform the decontamination or use a contracting or consulting service to perform it. These requirements are important to avoid the possibility of unnecessary wide-spread contamination if a sealed source is ruptured. The monitoring would detect contamination from a source rupture and the initiation of emergency procedures would limit the spread of contamination. Furthermore, decontamination would prevent contaminated objects from leaving the site and thus further prevent wide-spread contamination to public areas.

#### O. Security

The proposed rule (§ 39.71) would require that the licensee maintain surveillance and control of the jobsite's restricted areas (as defined in Part 20) and prevent unauthorized personnel, such as employees of an oil company or drilling company, from entering a restricted area. This requirement is needed to avoid the inadvertent exposure of these personnel to radiation.

#### P. Documents and Records Required at Field Stations and Temporary Jobsites

The proposed rule (§§ 39.73 and 39.75) would require that certain documents and records be kept at a field station or a temporary jobsite. These records are needed so that operating personnel can have easy access to the documents they need to perform the job, to follow any operational restrictions, or to use emergency procedures if an accident occurs. Records of radiation surveys, instrument calibrations, sealed source leak tests, etc., are needed for the licensee to make safety checks or to check schedules for maintenance. The recordkeeping requirement would also enable NRC inspectors to determine whether the requirements have been met.

#### Q. Notification of Incidents and Lost Sources and Abandonment Procedures for Irretrievable Sources \*

The proposed rule (§ 39.77(a)) would require, in addition to general reporting requirements in Part 20, immediate notification if (1) licensed material has been lost in or near freshwater aquifers or (2) a sealed source has been ruptured at the licensee's facility or temporary jobsite. This requirement is needed



because these conditions could cause radioactive contamination.

Paragraph (b) would also require that the licensee notify NRC of incidents and lost sources. (This does not include loss of a sealed source lodged in a well because it is covered by paragraph (c) of this section.) The requirements are presently contained in a more general form in §§ 20.402, 20.403, and 20.405 and are repeated in specific form for the sake of completeness.

Paragraphs (c) and (d) consolidate the existing regulations, 10 CFR 30.56 and 70.60, on irretrievable well-logging sources into one section in Part 39. The consolidation would be beneficial because it would put all requirements for well-logging operations in a single part. The proposed text is essentially the same as the existing text under §§ 30.56 and 70.60, which would be deleted.

#### *R. Application for Exemption*

The proposed rule (§ 39.91) would permit a licensee to apply for an exemption from the requirements in this part. This section is needed to allow NRC to judge on a case-by-case basis whether certain requirements can be waived if it determines that the exemption will not result in undue hazard to life or property.

#### **3. Summary**

The Commission believes that the proposed rule, if adopted, would provide a comprehensive and consistent set of regulations that would help maintain compatibility between NRC's and Agreement States' regulations. Furthermore, the proposed rule would also establish additional requirements that would reduce the potential for and severity of an accident. The Commission also believes that the economic impact of the rule would be small. The economic impact is analyzed in detail in a draft regulatory analysis prepared on this proposed rule.

Interested persons are encouraged to comment on the proposed rule, on its impact on the public and the industry, and on the draft regulatory analysis.

#### **Finding of No Significant Environmental Impact: Availability**

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that this rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and therefore an environmental impact statement is not required. This rule would not significantly affect the quality of the human environment because the

proposed requirements are designed to control the use of licensed materials in well-logging operations. On the other hand, these requirements, if adopted, would reduce occupational radiation exposures and would also reduce the chances for and consequences of accidents involving licensed materials. Furthermore, most of these requirements are already being complied with by licensees as licensing conditions. Therefore, the proposed rule would have no measurable negative environmental impact. The environmental assessment and finding of no significant impact on which this determination is based are available for inspection at the NRC Public Document Room, 1717 H Street NW., Washington, DC. Single copies of the environmental assessment and finding of no significant impact are available from Dr. Anthony N. Tse, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555 (301-443-7901).

#### **Paperwork Reduction Act Statement**

This proposed rule contains new information collection requirements that are subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). It has been submitted to the Office of Management and Budget for review and approval of the paperwork requirements.

#### **Regulatory Analysis**

The Commission has prepared a draft regulatory analysis on this proposed regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The draft analysis is available for inspection in the NRC Public Document Room, 1717 H Street NW., Washington, D.C. Single copies of the analysis may be obtained from Dr. Anthony N. Tse, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555 (301-443-7901).

The Commission requests public comment on the draft analysis. Comments on the draft analysis may be submitted to the NRC as indicated under the ADDRESSES heading.

#### **Regulatory Flexibility Certification**

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certified that this rule, if adopted, will not have a significant economic impact upon a substantial number of small entities. The proposed rule would provide radiation safety requirements, uniformity in the NRC and Agreement States regulations, and requirements that would reduce the risks of accidents involving radiation or radioactive materials. The proposed rule

affects about 173 specific licensees of which approximately 60% are small entities based on the size standards of the Small Business Administration set out in 13 CFR Part 121 (February 9, 1964, 49 FR 5024). These licenses are issued to companies performing well-logging operations.

The Commission estimates that the total cost of compliance with the requirements contained in this proposed regulation would be approximately \$7,400 a year for an average well-logging licensee. However, many well-logging licensees are already complying with most of these requirements because the requirements are currently imposed as conditions of the license under which they operate. Therefore, the actual increases in the compliance cost to most licensees would be considerably smaller. The cost to an average well-logging licensee for those requirements not already imposed under a license condition would be approximately \$2,000 a year.

The Commission does not believe that this regulation would impose a significant economic impact on most licensees. A detailed analysis of the cost of each individual requirement imposed by the regulation appears in the Regulatory Analysis prepared for this action. The Commission is particularly interested in receiving comment from well-logging licensees on the cost estimates contained in the Regulatory Analysis and on the assumptions on which these estimates are based. The Commission is also interested in receiving comment from small licensees about the potential impact of the proposed regulation and the resultant cost of these requirements on their operations.

Any small entity subject to this regulation which determines that, because of its size, it is likely to bear a disproportionate adverse economic impact should notify the Commission of this in a comment that indicates the following:

(a) The licensee's size in terms of annual income or revenue, number of employees, number of well-logging trucks, and average number of wells logged or serviced annually;

(b) How the proposed regulations would result in a significant economic burden upon the licensee as compared to that on a larger licensee; and

(c) How the proposed regulations could be modified to take into account the licensee's differing needs or capabilities.

**List of Subjects****10 CFR Pt. 119**

Environmental protection. Nuclear materials. Nuclear power plants and reactors. Occupational safety and health. Penalty. Radiation protection. Reporting and recordkeeping requirements. Sex discrimination.

**10 CFR Part 20**

Byproduct material. Licensed material. Nuclear materials. Nuclear power plants and reactors. Occupational safety and health. Packaging and containers. Penalty. Radiation protection. Reporting and recordkeeping requirements. Special nuclear material. Source material. Waste treatment and disposal.

**10 CFR Part 21**

Nuclear power plants and reactors. Penalty. Radiation protection. Reporting and recordkeeping requirements.

**10 CFR Part 30**

Byproduct material. Government contracts. Intergovernmental relations. Isotopes. Nuclear materials. Penalty. Radiation protection. Reporting and recordkeeping requirements.

**10 CFR Part 39**

Byproduct material. Nuclear material. Oil and gas exploration—well logging. Penalty. Reporting and recordkeeping requirements. Scientific equipment. Security measures. Source material. Special nuclear material.

**10 CFR Part 40**

Government contracts. Hazardous materials—transportation. Nuclear materials. Penalty. Reporting and recordkeeping requirements. Source material. Uranium.

**10 CFR Part 51**

Administrative practice and procedure. Environmental impact statement. Nuclear materials. Nuclear power plants and reactors. Reporting and recordkeeping requirements.

**10 CFR Part 70**

Hazardous materials—transportation. Nuclear materials. Packaging and containers. Penalty. Radiation protection. Reporting and recordkeeping requirements. Scientific equipment. Security measures. Special nuclear material.

**10 CFR Part 71**

Hazardous materials—transportation. Nuclear materials. Packaging and containers. Penalty. Reporting and recordkeeping requirements.

**10 CFR Part 150**

Hazardous materials—transportation. Intergovernmental relations. Nuclear materials. Penalty. Reporting and recordkeeping requirements. Security measures. Source material. Special nuclear material.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is proposing to adopt 10 CFR Part 39.

It is proposed to amend 10 CFR as follows:

1. Part 39 is added to 10 CFR Chapter I to read as follows:

**PART 39—LICENSES AND RADIATION SAFETY REQUIREMENTS FOR WELL-LOGGING OPERATIONS**

**Subpart A—General Provisions****Sec.**

- 39.1 Purpose and scope.
- 39.2 Definitions.
- 39.5 Interpretations.
- 39.8 Information collection requirements: OMB approval.

**Subpart B—Specific Licensing Requirements**

- 39.11 Application for a specific license.
- 39.13 Specific licenses for well-logging operations.
- 39.15 Requirement for an agreement with well owner or operator.
- 39.17 Request for written statements.

**Subpart C—Equipment Control**

- 39.31 Labels, security and transportation precautions.
- 39.33 Radiation detection instruments.
- 39.35 Leak testing of sealed sources.
- 39.37 Physical inventory.
- 39.39 Utilization records.
- 39.41 Design and performance criteria for sealed sources.
- 39.43 Inspection, maintenance, and opening of a source or source holder.
- 39.45 Subsurface tracer studies.
- 39.47 Radioactive markers.
- 39.49 Uranium sinker bars.
- 39.51 Use of a sealed source in a well without surface casing.

**Subpart D—Radiation Safety Requirements**

- 39.61 Training.
- 39.63 Operating and emergency procedures.
- 39.65 Personnel monitoring.
- 39.67 Radiation surveys.
- 39.69 Radioactive contamination control.

**Subpart E—Security, Records, Notifications**

- 39.71 Security.
- 39.73 Documents and records required at field stations.
- 39.75 Documents and records required at temporary jobsites.
- 39.77 Notification of incidents and lost sources; abandonment procedures for irretrievable sources.

**Subpart F—Exemptions****Sec.**

- 39.91 Applications for exemptions.

**Subpart G—Enforcement****39.101 Violations.**

Authority: Sections 53, 57, 62, 63, 65, 69, 81, 82, 161, 182, 183, 186, 68 Stat. 929, 930, 932, 933, 934, 935, 948, 953, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2092, 2093, 2095, 2099, 2111, 2112, 2201, 2232, 2236, 2282); secs. 201, as amended, 202, 206, 68 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

For purposes of sec. 223, 68 Stat. 958 as amended (42 U.S.C. 2273): §§ 39.15, 39.31–39.51, 39.61–39.77 are issued under sec. 161b, 68 Stat. 948, as amended (42 U.S.C. 2201(b)); and §§ 39.15, 39.33–39.43, 39.61–39.67, 39.73–39.77 are issued under sec. 161o, 68 Stat. 950, as amended (42 U.S.C. 2201(o)).

**Subpart A—General Provisions****§ 39.1 Purpose and scope.**

(a) This part prescribes requirements for the issuance of a license authorizing the use of licensed materials including sealed sources, radioactive tracers, radioactive markers, and uranium sinker bars in well-logging operations in a single well. This part also prescribes radiation safety requirements for persons using licensed materials in these operations. The provisions and requirements of this part are in addition to, and not in substitution for, other requirements of this chapter. In particular, the provisions of Parts 19, 20, 21, 30, 40, 70, 71, and 150 of this chapter apply to applicants and licensees subject to this part.

(b) The requirements set out in this part do not apply to the issuance of a license authorizing the use of licensed material in tracer studies involving multiple wells, e.g., field flooding studies.

**§ 39.2 Definitions.**

"Casing" means a metal pipe or tube used as a lining for oil or gas wells to prevent collapse of the well-bore.

"Field station" means a facility where licensed material may be stored or used and from which equipment is dispatched to temporary jobsites.

"Fresh water aquifer," for the purpose of this part, means a geological formation that is capable of yielding a significant amount of fresh water to a well or spring.

"Injection tool" means a device used for controlled subsurface injection of radioactive tracer material.

"Irretrievable well-logging source" means any sealed source containing licensed material that is pulled off or not connected to the wireline that suspends the source in the well and for which all

reasonable effort at recovery has been expended.

"Licensed material" means byproduct material, source material, or special nuclear material received, possessed, used, or transferred under a license issued by the Commission under the regulations in this chapter.

"Logging assistant" means an individual who assists the logging supervisor in performing the well-logging operations.

"Logging supervisor" means an individual who provides personal supervision of the use of licensed material at the temporary jobsite and who is responsible to the licensee for assuring compliance with the requirements of the Commission's regulations and the conditions of the license.

"Logging tool" means a device used subsurface to perform well-logging.

"Mineral logging" means any logging performed for the purpose of mineral exploration other than oil or gas.

"Personal supervision" means guidance and instruction by a logging supervisor who is physically present at the temporary jobsite and in such proximity that personal contact with the logging assistants is maintained and that immediate assistance can be given.

"Radioactive marker" means licensed material used for the purpose of depth determination or direction orientation. This term includes radioactive collar markers and radioactive iron nails.

"Sealed source" means any licensed material that is encased in a capsule designed to prevent leakage or escape of the radioactive material.

"Source holder" means a housing or assembly into which a sealed source is placed for the purpose of facilitating the handling and use of the source in well-logging operations.

"Subsurface tracer study" means, for the purpose of this part, the release of unsealed license material or a substance labeled with licensed material in a single well for the purpose of tracing the movement or position of the material or substance in the well-bore or adjacent formation (this term does not include the use of licensed material in field flooding studies).

"Surface casing" means a pipe or tube used as a lining in a well to isolate the fresh water zone from the well.

"Temporary jobsite" means a place to which licensed materials are dispatched to perform well-logging operations or subsurface tracer studies.

"Uranium sinker bar," for the purpose of this part, means a weight containing depleted uranium used for the purpose of providing additional force to pull a

logging tool down toward the bottom of a well.

"Well-bore" means a drilled hole in which well-logging operations and subsurface tracer studies are performed.

"Well-logging" or "wireline service operation," for the purpose of this part, means the lowering and raising of measuring devices or tools which contain licensed material into well-bores or cavities for the purpose of obtaining information about the well or adjacent formations which may be used in oil, gas, mineral, or geological exploration.

"Well-logging operation" means any activity involving licensed material performed in a well, including well-logging, mineral logging, subsurface tracer studies, use of radioactive markets, radioactive iron nails, uranium sinker bars, and radioactive sands.

"Wireline" means a cable containing one or more electrical conductors which is used to lower and raise logging tools in the well-bore.

#### § 39.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

#### § 39.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). OMB has approved the information collection requirements contained in this part under control number 3150-\_\_\_\_\_.

(b) The approved information collection requirements contained in this part appear in §§ 39.11, 39.13, 39.15, 39.31, 39.33, 39.35, 39.37, 39.39, 39.41, 39.43, 39.49, 39.61, 39.65, 39.67, 39.73, 39.75, and 39.77.

### Subpart B—Specific Licensing Requirements

#### § 39.11 Application for a specific license.

A person, as defined in § 30.4(k) of this chapter, shall file an application for a specific license authorizing the use of licensed material in well-logging operations on Form NRC 313, "Application for Material License." Each application for a license, other than a license exempted from Part 170 of this chapter, must be accompanied by the

fee prescribed in § 170.31 of this chapter. The application must be sent to the appropriate NRC Regional Office listed in Appendix D of Part 20 of this chapter.

#### § 39.13 Specific licenses for well-logging operations.

(2) The Commission will approve an application for a specific license for the use of licensed material in well-logging operations if the applicant meets the following requirements:

(a) The applicant shall satisfy the general requirements specified in § 30.33 of this chapter for byproduct material, in § 40.32 of this chapter for source material, and in § 70.33 of this chapter for special nuclear material, as appropriate, and any special requirements contained in this part.

(b) The applicant shall develop a program for training logging supervisors and logging assistants and submit to the Commission a schedule or description of this program which specifies the—

- (1) Initial training;
- (2) Annual retraining;
- (3) On-the-job training;

(4) Means the applicant will use, including a copy of the written test, to demonstrate the logging supervisor's knowledge and understanding of and ability to comply with the Commission's regulations and licensing requirements, and the applicant's operating and emergency procedures; and

(5) Means the applicant will use, including a copy of the written test or an outline of the oral test, to demonstrate the logging assistant's knowledge and understanding of and ability to comply with, the applicant's operating and emergency procedures.

(c) The applicant shall establish and submit to the Commission written operating and emergency procedures as described in § 39.63.

(d) The applicant shall establish and submit to the Commission a program for annual internal inspections of the performance of each logging supervisor and assistant to ensure that the Commission's regulations, license requirements, and the applicant's operating and emergency procedures are followed by these personnel. Inspection records must be retained for 3 years after each annual internal inspection.

(e) The applicant shall submit a description of its overall organizational structure pertaining to the well-logging operations, including specified delegations of authority and responsibility.

(f) (1) If the applicant wants to conduct and evaluate its own leak tests, it shall establish procedures to be followed in leak testing sealed sources



for possible leakage and contamination and submit a description of these procedures to the Commission. The description must include the—

- (i) Instrumentation to be used;
- (ii) Method of performing test; and
- (iii) Pertinent experience of the person who will perform the test.

(2) If an applicant wants to use a leak test kit, it shall identify the manufacturer and the model number of the kit.

**§ 39.15 Requirement for an agreement with well owner or operator.**

(a) A licensee shall not perform well-logging with a sealed source unless it executes a written agreement with the well owner or operator, whichever engaged the licensee to perform the well-logging operation. The licensee shall retain a copy of the written agreement for 3 years after the completion of the well-logging operation.

(b) This written agreement must specify that:

(1) If a sealed source becomes lodged in the well, a reasonable effort will be made to recover it;

(2) A person may not attempt to recover a sealed source in a manner which, in the licensee's opinion, could result in its rupture;

(3) If the environment or if any equipment or personnel are contaminated with licensed material, they must be decontaminated before release from the site or release for unrestricted use; and

(4) If, after reasonable efforts at recovery have been expended, the sealed source is classified as irretrievable, the following requirements must be implemented within 30 days after a sealed source is classified as irretrievable:

(i) Each irretrievable well-logging source must be immobilized and sealed in place with a cement plug;

(ii) A whipstock or other deflection device must be set at some point in the well above the cement plug, unless the cement plug and source are not accessible to any subsequent drilling operations; and

(iii) A permanent identification plaque, constructed of long lasting material such as stainless steel, brass, bronze, or monel, must be mounted at the surface of the well, unless the mounting of the plaque is not practical. The size of the plaque must be at least 7-inches square and 1/8-inch thick. The plaque must contain—

(A) The word "CAUTION";

(B) The radiation symbol (the color requirement in § 20.203 of this chapter need not be met);

(C) The date the source was abandoned;

(D) The name of the well owner or well operator, as appropriate;

(E) The well name and well identification number(s) or other designation;

(F) An identification of the sealed source(s) by radionuclide and quantity;

(G) The depth of the source and depth to the top of the plug; and

(H) An appropriate warning such as "DO NOT RE-ENTER THIS WELL."

(c) A licensee may apply under § 39.91 for Commission case-by-case approval of proposed procedures to abandon an irretrievable well-logging source in a manner not otherwise authorized in paragraph (b)(4) of this section.

**§ 39.17 Request for written statements.**

Each license is deemed to contain the condition that the licensee will, at any time before expiration of the license, upon the Commission's request, submit written statements, signed under oath or affirmation, to enable the Commission to determine whether or not the license should be modified, suspended, or revoked.

**Subpart C—Equipment Control**

**§ 39.31 Labels, security and transportation precautions.**

(a) *Labels.* (1) The licensee may not use a source, source holder, or logging tool containing licensed material unless it bears a durable, legible, and clearly visible marking or label. The label must contain the radiation symbol specified in § 20.203 of this chapter, without the conventional color requirements, and the wording "DANGER (or CAUTION) RADIOACTIVE MATERIAL." The label must be on the smallest component that contains the licensed material transported as a separate piece of equipment.

(2) The licensee may not use a storage or transport container to store or transport licensed material unless it has permanently attached to it a durable, legible, and clearly visible label. The label must contain the radiation symbol, in conventional colors, and the wording "CAUTION (or DANGER). RADIOACTIVE MATERIAL, NOTIFY CIVIL AUTHORITIES (or NAME OF COMPANY)."

(b) *Security precautions during storage and transportation.* (1) The licensee shall store each source containing licensed material in a storage container or transportation package. The container or package must be locked and physically secured to prevent tampering or removal of licensed material from storage by

unauthorized personnel. The licensee shall store licensed material in a manner which will minimize danger from explosion or fire.

(2) The licensee shall lock and physically secure the transport package containing licensed material to the transporting vehicle to prevent accidental loss, tampering, or unauthorized removal of the licensed material from the vehicle.

(c) *Transportation precautions.* The licensee shall comply with the applicable provisions of the transportation regulations prescribed in Part 71 of this chapter. (Transportation of radioactive material is also subject to the Department of Transportation's regulations in 49 CFR Parts 171 through 178 which include provisions for proper packaging, marking and labeling, placarding of the transport vehicle, monitoring, accident reporting and for shipping papers.)

**§ 39.33 Radiation detection instruments.**

(a) The licensee shall keep a calibrated and operable radiation survey instrument at each field station and temporary jobsite to make the radiation surveys that are required by this part and by Part 20 of this chapter. To satisfy this requirement, the radiation survey instrument must be capable of measuring 0.1 milliroentgen per hour through at least 100 milliroentgens per hour. Survey instruments acquired before [one year after the effective date] and capable of measuring 0.1 milliroentgen per hour through at least 20 milliroentgens per hour also satisfy this requirement until [5 years after the effective date].

(b) The licensee shall have available additional calibrated and operable radiation detection instruments capable of detecting radiation and contamination levels that could be encountered during well-logging operations or in the event of an accident. The licensee may own the instruments or may arrange to obtain them from a second party.

(c) The licensee shall have each radiation survey instrument required under paragraph (a) of this section calibrated—

(1) At intervals not to exceed 6 months and after instrument servicing;

(2) At two points located approximately 1/3 and 2/3 of full scale on each scale (for logarithmic scale, at mid range of each decade, and at two points of at least one decade); and

(3) So that accuracy within plus or minus 20 percent of the true radiation level can be demonstrated on each scale.



(d) The licensee shall maintain calibration records for a period of 3 years after the date of calibration for inspection by the Commission.

#### § 39.35 Leak testing of sealed sources.

(a) *Testing and recordkeeping requirements.* Each licensee using a sealed source shall have the source tested for leakage. The licensee shall keep a record of the leak test result in units of microcuries and maintain the record for inspection by the Commission for 3 years after the leak test is performed.

(b) *Method of testing.* A test for leakage must be performed only by a person specifically authorized by the Commission or an Agreement State to perform the test. The test sample must be taken from the nearest accessible point to the sealed source where contamination might accumulate. The test sample must be analyzed for radioactive contamination. The analysis must be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample.

(c) *Test frequency.* Each sealed source must be tested for leakage at intervals not to exceed 6 months. In the absence of a certificate from a transferor that a test has been made within the 6 months before the transfer, the sealed source may not be used until tested.

(d) *Removal of leaking source from service.* (1) If the test conducted pursuant to paragraph (a) and (b) of this section reveals the presence of 0.005 microcurie or more of removable radioactive material, the licensee shall remove the sealed source from service immediately and have it decontaminated, repaired, or disposed of by an NRC or Agreement State licensee that is authorized to perform these functions. The licensee shall check the equipment associated with the leaking source for radioactive contamination and, if contaminated, have it decontaminated or disposed of by an authorized licensee.

(2) The licensee shall file a report with the appropriate NRC Regional Office listed in Appendix D of Part 20 of this chapter, within 5 days of the test. The report must describe the equipment involved in the leakage, the test results, any contamination which resulted from the leaking source, and the corrective action taken.

(e) *Exemptions from testing requirements.* The following sealed sources are exempt from periodic leak test requirements in paragraphs (a) through (d) of this section:

(1) Hydrogen-3 sources:

(2) Sources containing licensed material with a half-life of 30 days or less;

(3) Sealed sources containing licensed material in gaseous form;

(4) Sources of beta- and/or gamma-emitting radioactive material with an activity of 100 microcuries or less; and

(5) Sources of alpha-emitting radioactive material with an activity of 10 microcuries or less.

#### § 39.37 Physical inventory.

Each licensee shall conduct a semiannual physical inventory to account for all licensed material received and possessed under the license. The licensee shall maintain records of the inventory for 3 years from the date of the inventory for inspection by the Commission. The inventory must indicate the quantity and kind of licensed material, location of the licensed material, the date of the inventory, and the name of the individual conducting the inventory.

#### § 39.39 Utilization records.

(a) Each licensee shall maintain a record showing the following information for each utilization of licensed material:

(1) The make, model number, and a serial number or a description of each sealed source used;

(2) In the case of a radioactive marker or unsealed licensed material used for subsurface tracer studies, the radionuclide and quantity of activity used in a particular well;

(3) The identity of the logging supervisor and logging assistants to whom the licensed material is assigned; and

(4) Location and date of use of the licensed material.

(b) The licensee shall maintain the records required by paragraph (a) of this section available for inspection by the Commission and shall retain the record for 3 years from the date of the recorded event.

#### § 39.41 Design and performance criteria for sealed sources.

(a) A licensee may not use a sealed source, except one containing licensed material in gaseous form, manufactured after [one year after the effective date of the final rule] in well-logging unless the manufacturer certifies to licensee that the sealed source meets the following criteria:

(1) It is doubly encapsulated construction;

(2) It contains licensed material whose chemical and physical forms are as insoluble and non-dispersible as practical;

(3) It has individually passed pressure testing to 24 600 pounds per square inch absolute without leakage; and

(4) It meets the following performance requirements by prototype testing. Compliance with the tests is determined by the ability of the prototype to maintain its integrity after each of the following tests:

(i) *Temperature*—the test source must be held at  $-40^{\circ}\text{C}$  for 20 minutes,  $600^{\circ}\text{C}$  for 1 hour, and then be subject to a thermal shock test with a temperature drop from  $600^{\circ}\text{C}$  to  $20^{\circ}\text{C}$  within 15 seconds;

(ii) *Impact test*—a 5 kg steel hammer, 2.5 cm in diameter, must be dropped from a height of 1 m onto the test source;

(iii) *Vibration test*—the test source must be subject to a vibration from 25 Hz to 500 Hz at 5 g amplitude for 30 minutes; and

(iv) *Puncture test*—a 1 gram hammer and pin, 0.3 cm pin diameter, must be dropped from a height of 1 m onto the test source.

(b) After [2 years after the effective date of this rule], a licensee may not use a sealed source manufactured before [one year after the effective date of this rule], except one containing licensed material in gaseous form, unless the manufacturer, or a qualified testing organization, certifies to the licensee that the sealed source meets:

(1) The criteria of paragraphs (a)(1), (a)(2), and (a)(3) of this section; or

(2) The criteria of paragraphs (a)(1), (a)(2), (a)(3) of this section by prototype test, and the performance requirement of paragraph (a)(4) of this section.

(c) The licensee shall keep the certification documents described by paragraphs (a) and (b) of this section for inspection by the Commission for 3 years after transfer or disposal of the source or its abandonment in a well.

#### § 39.43 Inspection, maintenance, and opening of a source or source holder.

(a) Each licensee shall inspect the source holders, logging tools, and source handling tools for obvious defects before the equipment is used each day to ensure that the equipment is in good working condition.

(b) Each licensee shall conduct a program of visual inspection and maintenance of source holders, logging tools, source handling tools, storage containers, transport containers, injection tools, and sinker bars to ensure that the required labeling is legible and that visual physical damage is absent. The licensee shall perform the visual inspection and maintenance at least every 6 months. The licensee shall maintain records of inspection and

maintenance for 3 years for inspection by the Commission.

(c) If the inspection conducted under paragraph (a) of this section reveals damage to the labeling or to components critical for radiation safety, the licensee shall remove the item from service until repairs are made.

(d) Removal of a sealed source from a source holder, and maintenance on sealed sources, holders or pressure housings in which sealed sources are placed, or on other equipment containing a sealed source may not be performed unless a written instruction has been approved by the Commission as part of the license application.

(e) If a sealed source is stuck in the source holder or logging tool, the licensee may not perform any operation, such as drilling, cutting, or chiseling, on the source holder or logging tool, unless it is specifically licensed by the Commission to perform this operation.

(f) The repair, opening, or modification of any sealed source must be performed only by persons specifically licensed to do so by the Commission.

#### § 39.45 Subsurface tracer studies.

(a) The licensee shall require all personnel handling radioactive tracer material to use protective gloves and clothing and other appropriate equipment. The licensee shall take precautions to avoid ingestion or inhalation of radioactive tracer material and to avoid contamination of field stations and temporary jobsites. (Bioassay services may be required by § 39.65(b).)

(b) A licensee may not inject licensed material into fresh water aquifers unless specifically authorized to do so by the Commission.

#### § 39.47 Radioactive markers.

The licensee may not use a radioactive marker in wells, unless the individual marker contains quantities of licensed material not exceeding the specified quantities in § 30.71 of this chapter.

#### § 39.49 Uranium sinker bars.

The licensee may not use a uranium sinker bar in well-logging operations after [one year from the effective date of the rule], unless it is legibly impressed with the words "CAUTION-RADIOACTIVE-DEPLETED URANIUM" and "NOTIFY CIVIL AUTHORITIES (or COMPANY NAME) IF FOUND."

#### § 39.51 Use of a sealed source in a well without surface casing.

7 The licensee may not use a sealed source in a well without a surface casing designed to protect fresh water aquifer

zones, unless procedures for protecting these zones are specifically approved by the Commission.

### Subpart D—Radiation Safety Requirements

#### § 39.61 Training.

(a) The licensee may not permit an individual to act as a logging supervisor until that person:

8 (1) Has completed at least 40 hours of formal training in the subjects outlined in paragraph (e) of this section;

(2) Has received copies of and instruction in:

(i) NRC regulations contained in this part and in the applicable section of Parts 19, 20, 21, 30, 40, 70, and 71 of this chapter;

(ii) The NRC license under which the logging supervisor will perform well-logging operations; and

(iii) The licensee's operating, recordkeeping, and emergency procedures;

(3) Has completed 3 months of on-the-job training and demonstrated competence in the use of licensed materials, remote handling tools, and radiation survey instruments by a field evaluation; and

(4) Has demonstrated understanding of the requirements in paragraphs (a) (1) and (2) of this section by successfully completing a written test.

(b) The licensee may not permit an individual to act as a logging assistant until that person:

(1) Has received instruction in applicable sections of Parts 19, 20, and 21 of this chapter;

(2) Has received copies of and instruction in the licensee's operating and emergency procedures;

(3) Has demonstrated understanding of the materials listed in paragraphs (b) (1) and (2) of this section by successfully completing a written or oral test; and

(4) Has received instruction in the use, under the personal supervision of the logging supervisor, of tracer material, sealed sources, remote handling tools, and radiation survey instruments.

(c) The licensee shall provide for the annual retraining of logging supervisors and logging assistants.

(d) The licensee shall maintain a record of each logging supervisor's and logging assistant's training, including copies of written tests and dates of oral tests, for 3 years following the termination of employment.

(e) The licensee shall include the following subjects in the formal training required in paragraph (a)(1) of this section:

(1) Fundamentals of radiation safety;

(i) Characteristics of radiation;

(ii) Units of radiation dose and quantity of radioactivity;

(iii) Hazards of exposure to radiation;

(iv) Levels of radiation from licensed material;

(v) Methods of controlling radiation dose;

(A) Working time;

(B) Working distances;

(C) Shielding;

(vi) Radiation safety practices, including prevention of contamination, and methods of decontamination;

(2) Radiation detection instrumentation to be used:

(i) Use of radiation survey instruments:

(A) Operation;

(B) Calibration;

(C) Limitations;

(ii) Survey techniques;

(iii) Use of personnel monitoring equipment;

(3) Equipment to be used:

(i) Handling equipment and remote handling tools;

(ii) Licensed materials;

(iii) Storage, control, and disposal of equipment and licensed material;

(iv) Operation and control of equipment and licensed materials;

(v) Maintenance of equipment;

(4) The requirements of pertinent Federal and State regulations; and

(5) Case histories and potential consequences of accidents in well-logging operations.

#### § 39.63 Operating and emergency procedures.

Each licensee shall develop and follow written operating and emergency procedures that cover instruction in—

(a) The handling and use of licensed materials to be employed so that no individual is likely to be exposed to radiation doses in excess of the limits established in Part 20 of this chapter;

(b) Methods and occasions for conducting radiation surveys;

(c) Methods and occasions for locking and securing licensed materials;

(d) Personnel monitoring and the use of personnel monitoring equipment;

(e) Transportation of licensed materials to field stations or temporary jobsites, including packing of licensed materials in vehicles, placarding of vehicles when needed, and physically securing licensed materials to transport vehicles during transportation to prevent accidental loss, tampering, or unauthorized removal;

(f) Minimizing personnel exposure, including that from inhalation and ingestion of licensed materials, during well-logging operations and in the event of an accident;

(g) The procedure for notifying proper persons in the event of an accident;

(h) Maintenance of records;

(i) The inspection of maintenance of source holders, logging tools, source handling tools, storage containers, transport containers, and injection tools;

(j) The procedure to be followed if a sealed source is lodged in a well or ruptured;

(k) The procedure to be used for picking up, receiving, and opening packages containing licensed materials;

(l) The procedure for identifying and reporting to NRC defects and noncompliance, as required by Part 21 of this chapter;

(m) The procedure and the use of tools for remote handling of sealed sources and radioactive tracer material, except low-activity calibration sources;

(n) The procedure to be used for detecting contamination, required by §§ 39.67(c) through (e), and for preventing the spread of contamination; and

(o) The procedure to be used to decontaminate the environment, equipment or personnel if any or all are contaminated.

#### § 39.65 Personnel monitoring.

(a) The licensee may not permit an individual to act as a logging supervisor or logging assistant unless that person wears, at all times during well-logging operations, either a film badge or a thermoluminescent dosimeter (TLD). Each film badge or TLD must be assigned to and worn by only one individual. The film badge must be replaced at least monthly and TLD badges replaced at least quarterly. The licensee shall have each badge or dosimeter processed.

(b) The licensee shall provide appropriate bioassay services to individuals using licensed materials in subsurface tracer studies.

(c) The licensee shall keep reports received from the badge or TLD processor and from the bioassay service laboratory for inspection until the Commission authorizes disposition or terminates the license.

#### § 39.67 Radiation surveys.

(a) The licensee shall make radiation surveys, including but not limited to paragraphs (b) through (e) of this section, of each area where licensed materials are used and stored.

(b) Before transporting the licensed materials, the licensee shall make a radiation survey of the position occupied by each individual in the vehicle and of the exterior of each vehicle used to transport the licensed materials.

(c) After removing the sealed source assembly from the logging tool and before departing from the temporary jobsite, the licensee shall confirm that the logging tool is free of contamination by energizing the logging tool detector or by using a survey meter.

(d) If the licensee suspects that, as a result of operations involving a sealed source, the encapsulation of the sealed source could be damaged by the operation, it shall conduct a radiation survey, including a contamination survey, during and after the operation.

(e) The licensee shall make a radiation survey at the temporary jobsite for each subsurface tracer study. The survey must include a measurement of radiation levels before and after the operation, and a measurement of contamination levels after the subsurface tracer study.

(f) The results of surveys required under paragraphs (a) through (e) of this section must be recorded and must include the date the survey took place, the name of the individual making the survey, the identification of the survey instrument used, and the location of the survey. The licensee shall maintain records of surveys for inspection by the Commission for 3 years after they are made.

#### § 39.69 Radioactive contamination control.

(a) During efforts to recover a sealed source lodged in the well, the licensee shall continuously monitor, with an appropriate radiation detection instrument or a logging tool with a radiation detector, the circulating fluids from the well to check for contamination resulting from damage to the sealed source.

(b) If the licensee detects evidence that the sealed source has ruptured or licensed materials have caused contamination, it shall initiate the emergency procedures required by § 39.63 immediately.

(c) If contamination results from the use of licensed material in well-logging operations, the licensee shall decontaminate all work areas, equipment, and unrestricted areas.

#### Subpart E—Security, Records, Notifications

##### § 39.71 Security.

During each well-logging operation, the logging supervisor or other licensee employee designated by the logging supervisor shall maintain direct surveillance of the operation to prevent unauthorized entry into a restricted area, as defined in § 20.3(a)(14) of this chapter.

##### § 39.73 Documents and records required at field stations.

(a) Each licensee shall maintain the following documents and records at the field station:

(1) A copy of applicable NRC regulations;

(2) The license authorizing the use of licensed material;

(3) Operating and emergency procedures;

(4) The record of the radiation survey instrument calibration required by § 39.33;

(5) The record of the leak test results required by § 39.35;

(6) Physical inventory records required by § 39.37;

(7) Utilization records required by § 39.39;

(8) Records of inspection and maintenance required by § 39.43;

(9) Training records required by § 39.61(d); and

(10) Survey records required by § 39.67.

(b) Records required by paragraphs (a)(1) through (3) of this section must be kept until the licensee terminates its well-logging operations at the field station. Records required by paragraphs (a)(4) through (10) of this section must be kept for 3 years.

##### § 39.75 Documents and records required at temporary jobsites.

Each licensee conducting operations at a temporary jobsite shall maintain the following documents and records at the temporary jobsite until the well-logging operation is completed:

(a) Operating and emergency procedures;

(b) Evidence of latest calibration of the radiation survey instruments in use at the site required by § 39.33;

(c) Latest survey records required by § 39.67;

(d) The shipping papers for the transportation of radioactive materials required by § 71.5 of this chapter; and

(e) A copy of the NRC license authorizing use of licensed materials, or a copy of the Agreement State license when operating under reciprocity pursuant to § 150.20 of this chapter.

##### § 39.77 Notification of incidents and lost sources; abandonment procedures for irretrievable sources.

(a) The licensee shall immediately notify the appropriate NRC Regional Office by telephone and subsequently within 5 days by confirmatory letter if it knows or has reason to believe that (1) licensed material has been lost in or near a fresh water aquifer; or (2) a sealed source has been ruptured. This



notice must designate the well or other location and describe the magnitude and extent of licensed materials, assess the consequences of the loss or rupture, and explain efforts planned or being taken to mitigate these consequences.

(b) The licensee shall notify the Commission of incidents and sources lost, other than in the well, in accordance with §§ 20.402, 20.403, and 20.405 of this chapter.

(c) If a sealed source becomes lodged in a well, and when it becomes apparent that efforts to recover the sealed source will not be successful, the licensee shall—

(1) Advise the well owner or operator, as appropriate, of the abandonment procedures under § 29.15 (b) or (c) and ensure that these procedures are implemented within 30 days after the sealed source has been classified as irretrievable; and

(2) Notify the appropriate NRC Regional Office by telephone of the circumstances of the loss, and request approval to implement abandonment procedures.

(d) The licensee shall, within 30 days after a sealed source has been classified as irretrievable, make a report in writing to the appropriate NRC Regional Office. The licensee shall send a copy of the report to each appropriate State agency that has authority over the particular well-drilling operation. The report must contain the following information:

- (1) Date of occurrence;
- (2) A description of the irretrievable well-logging source involved, including radionuclide, quantity, chemical and physical form;
- (3) Surface location and identification of the well;
- (4) Results of efforts to immobilize and seal the source in place;
- (5) Depth of the source;
- (6) Depth of the top of the cement plug;
- (7) Depth of the well;
- (8) Any other information (e.g., warning statement) contained on the permanent identification plaque;
- (9) Notifications made to State agencies; and
- (10) A brief description of the attempted recovery effort.

#### Subpart F—Exemptions

##### § 39.91 Applications for exemptions.

The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common

defense and security and are otherwise in the public interest.

#### Subpart G—Enforcement

##### § 39.101 Violations.

(a) An injunction or other court order may be obtained to prohibit a violation of any provision of this part.

(b) A court order may be obtained for the payment of a civil penalty imposed for violation of this part.

(c) Any person who willfully violates any provision of this part issued under section 161 b., i., or c. of the Atomic Energy Act of 1954, as amended, or the provisions cited in the authority citation at the beginning of this part may be guilty of a crime and, upon conviction, may be punished by fine or imprisonment, or both, as provided by law.

#### PART 19—NOTICES, INSTRUCTIONS, AND REPORTS TO WORKERS; INSPECTIONS

##### § 19.2 [Amended]

2. Section 19.2 is amended by adding "39," after "Parts 30 through 35," in the first sentence.

##### § 19.3 [Amended]

3. Section 19.3(d) is amended by adding "39," after "Parts 30 through 35," in the first sentence.

#### PART 20—STANDARDS FOR PROTECTION AGAINST RADIATION

##### § 20.2 [Amended]

4. Section 20.2 is amended by adding "39," after "Parts 30 through 35," in the first sentence.

##### § 20.3 [Amended]

5. Section 20.3(a)(9) is amended by adding "39," after "Parts 30 through 35," in the first sentence.

#### PART 21—REPORTING OF DEFECTS AND NONCOMPLIANCE

##### § 21.2 [Amended]

6. Section 21.2 is amended by adding "39," after "34, 35," in the first sentence.

#### PART 30—RULES OF GENERAL APPLICABILITY TO DOMESTIC LICENSING OF BYPRODUCT MATERIAL

##### § 30.4 [Amended]

7. In § 30.4, paragraph (b) and (i) are amended by adding "and 39" after "31 through 35", and paragraph (x) is removed.

##### § 30.5 [Amended]

8. Section 30.5 is amended by adding "and 39" after "31 through 35".

##### § 30.6 [Amended]

9. In § 30.6, paragraph (b)(1) is amended by adding "39" after "30 through 35" in the first sentence.

##### § 30.11 [Amended]

10. In § 30.11, paragraph (a) is amended by adding "and 39" after "31 through 35".

##### § 30.13 [Amended]

11. Section 30.13 is amended by adding "and 39" after "31 through 35".

##### § 30.14 [Amended]

12. In § 30.14, paragraph (a) is amended by adding "and 39" after "31 through 35" and paragraph (c) is amended by removing "and 34" and adding "34 and 39" after "32, 33".

##### § 30.15 [Amended]

13. In § 30.15, paragraph (a) is amended by adding "and 39" after "31 through 35".

##### § 30.18 [Amended]

14. In § 30.18, paragraph (a) is amended by adding "and 39" after "30 through 34".

##### § 30.31 [Amended]

15. Section 30.31 is amended by adding "and 39" after "32 through 35".

##### § 30.33 [Amended]

16. Section 30.33, paragraph (a)(4) is amended by adding "and 39" after "32 through 35".

##### § 30.34 [Amended]

17. Section 30.34, paragraph (a) and (b) are amended by adding "and 39" after "31 through 35"; paragraph (c) is amended by adding "and 39" after "31 through 35" in the first and the second sentences; paragraphs (d) and (e) are amended by adding "and 39" after "31 through 35".

##### § 30.39 [Amended]

18. Section 30.39 is amended by adding "and 39" after "32 through 35".

##### § 30.56 [Removed]

19. Section 30.56 is removed.

#### PART 40—DOMESTIC LICENSING OF SOURCE MATERIAL

##### § 40.5 [Amended]

20. In § 40.5, paragraph (b)(1) is amended by adding "39," after "30 through 35," in the first sentence.



## PART 51—ENVIRONMENTAL REGULATIONS FOR DOMESTIC LICENSING AND RELATED REGULATORY FUNCTIONS

### § 51.22 [Amended]

21. In § 51.22, paragraphs (c)(3), (c)(10) and (c)(14) are amended by adding "39," after "34, 35," in the first sentence of each paragraph.

## PART 70—DOMESTIC LICENSING OF SPECIAL NUCLEAR MATERIAL

### § 70.4 [Amended]

22. In § 70.4, paragraph (w) is removed.

### § 70.5 [Amended]

23. In § 70.5, paragraph (b)(1) is amended by adding "39" after "30 through 35."

### § 70.60 [Removed]

24. Section 70.60 is removed.

## PART 71—PACKAGING AND TRANSPORTATION OF RADIOACTIVE MATERIAL

### § 71.0 [Amended]

25. In § 71.0, paragraph (b) is amended by adding "39," after "21, 30," in the first sentence.

## PART 150—EXEMPTIONS AND CONTINUED REGULATORY AUTHORITY IN AGREEMENT STATES AND IN OFFSHORE WATERS UNDER SECTION 274

### § 150.20 [Amended]

26. In § 150.20, paragraph (b) is amended by removing "70.60, to 70.62, inclusive," and adding "70.61, 70.62," after "70.51 to 70.56, inclusive,"; and by adding "§ 39.15 and Subparts C, D, E, F, and G of Part 39" after "and to the provisions of Parts 19, 20, and 71" of the first sentence.

The conforming amendments to Parts 19, 20, 21, 30, 40, 51, 70, 71, and 150 are issued under the following authority:

(Sec. 161, Pub. L. 83-703, 68 Stat. 948, as amended (42 U.S.C. 2201); sec. 201, Pub. L. 93-438, 82 Stat. 1242, as amended (42 U.S.C. 5841))

Dated at Washington, D.C. this 2nd day of April, 1985.

For the Nuclear Regulatory Commission.

John C. Hoyle,

Acting Secretary of the Commission.

[FR Doc. 85-8340 Filed 4-5-85; 8:45 am]

BILLING CODE 7590-01-M

## 10 CFR Part 50

### Proposed Policy for Regulation of Advanced Nuclear Power Plants; Correction

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Proposed Policy Statement; correction.

**SUMMARY:** This document corrects a proposed policy statement.

**FOR FURTHER INFORMATION CONTACT:** Dennis K. Rathbun or James G. Beckerley, (202-634-3295).

**SUPPLEMENTARY INFORMATION:** In FR Doc. 85-7136 appearing on page 11882 in the issue of Tuesday, March 26, 1985, make the following correction:

Page 11882, third column, under the "DATES" caption change the comment expiration date to May 28, 1985.

Approved: April 2, 1985.

John C. Hoyle,

Acting Secretary.

[FR Doc. 85-8342 Filed 4-5-85; 8:45 am]

BILLING CODE 7590-01-M

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

## 14 CFR Part 21

[Docket No. CE-2, Notice No. 23-ACE-10A]

### Special Conditions; Soloy Conversions, Ltd., Modified Cessna Model 207 Series Airplane

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Withdrawal of proposed special conditions.

**SUMMARY:** This notice withdraws Notice No. 23-ACE-10, published in the *Federal Register* on October 15, 1984, [49 FR 40184]. That notice proposed special conditions for the supplemental type certification of Soloy Conversions, Ltd. turbine-powered Cessna Models 207, T207, 207A and T207A airplanes. That notice is being withdrawn because Part 23 of the Federal Aviation Regulations (FAR) has been amended to include the standards proposed in these special conditions (Amendment 23-31). The certification basis for these Soloy Conversions, Ltd. turbine-powered Cessna 207 Series airplanes is being revised to include Amendment 23-31.

**FOR FURTHER INFORMATION CONTACT:** William L. Olson, Aerospace Engineer, Regulations and Policy Office (ACE-110), Aircraft Certification Division, Central Region, Federal Aviation

Administration, Room 1656, Federal Office Building, 601 East 12th Street, Kansas City, Missouri 64106; telephone (816) 374-5688.

### SUPPLEMENTARY INFORMATION:

#### Background

On September 15, 1983, Soloy Conversions, Ltd., 450 Pat Kennedy Way, SW., Olympia, Washington 98502, submitted an application for supplemental type certification of turbine-powered Cessna Model 207 Series airplanes which are single-engine, unpressurized, seven-place, highwing monoplanes. The existing propulsion system is a single, 284-continuous-horsepower, reciprocating engine. The airplane's maximum gross takeoff weight is 3800 pounds.

This modification of the Cessna 207 Series airplanes places a turbine engine substantially forward from the original reciprocating engine location which, in turn, makes the engine installation more critical with regard to engine mount flexibility. A flexible engine installation can cause an aeroelastic instability commonly known as propeller whirl flutter.

Now that the final rule has been published in the *Federal Register* (49 FR 46866; November 28, 1984) and Soloy has agreed to comply with Amendment 23-31 to Part 23 of the FAR in their January 15, 1985, letter, this notice can be withdrawn.

#### The Decision and Withdrawal

Accordingly, Notice No. 23-ACE-10 is withdrawn.

(Secs. 313(a), 601, and 603 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1354(a), 1421, and 49 U.S.C. 106(g) (revised, Pub. L. 97-449, January 12, 1983)))

Issued in Kansas City, Missouri on March 26, 1985.

John E. Shaw,

Acting Director, Central Region.

[FR Doc. 85-8272 Filed 4-5-85; 8:45 am]

BILLING CODE 4910-13-M

## 14 CFR Part 39

[Docket No. 84-NM-39-AD]

### Airworthiness Directives; British Aerospace Model BAC 1-11 400 Series Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of Proposed Rulemaking (NPRM).

**SUMMARY:** This notice proposes to adopt an airworthiness directive (AD) that