Minnesota Department of [Name]

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Proposed Amendment to Rules Governing Radioactive Materials, *Minnesota Rules*, Chapter 4731

I certify that on September 2, 2010, before the Statement of Need and Reasonableness became available to the public, I mailed a copy of the Statement to the Legislative Reference Library by depositing it in United States mail with postage prepaid. I mailed this copy to comply with Minnesota Statutes, sections 14.131 and 14.23.

F. Johns, Jr., Supervisor

Minnesota Department of Health Environmental Health Division Indoor Environments and Radiation Section

STATEMENT OF NEED AND REASONABLENESS

Proposed Amendment to Rules Governing Radioactive Materials, *Minnesota Rules*, Chapter 4731

The Minnesota Department of Health proposes to amend Chapter 4731 to reflect the U.S. Nuclear Regulatory Commission's (NRC's) recent regulation changes to the medical use of byproduct material. The proposed changes are necessary to conform to US Nuclear Regulatory Commission regulations. Specifically, the changes "grandfather" authorized medical users of radioactive materials to allow them to serve as preceptors and supervisors for individuals seeking recognition on MDH licenses for the same medical uses. The rules do not affect the Veteran's Administration facilities, which are under federal jurisdiction.

The proposed rule changes also include Minnesota Department of Health-initiated change to address qualification for nuclear medicine technologists, to clarify existing requirements, and to correct editorial issues.

INTRODUCTION

By an agreement with the NRC, the State of Minnesota regulates byproduct, source, and special nuclear material. Essentially, this means that Minnesota now regulates radioactive material within the state. As a result, the licensees that include hospitals and clinics, manufacturing facilities, engineering companies, and universities and colleges in Minnesota benefit from reduced fees. The agreement does not cover nuclear-power-plant regulation, byproduct material used at facilities under exclusive federal jurisdiction, exempt-quantities distribution, or sealed-sources or devices evaluation. The NRC still performs these functions exclusively.

Minnesota and other states that have entered into this type of agreement are known as "Agreement States." The Agreement requires Minnesota to have rules that are compatible with NRC regulations. When the NRC makes regulation changes, the Agreement States have a set period of time to bring their rules likewise up to date. The NRC categorizes their regulations by level of compatibility required—some categories require strict adherence while others allow states flexibility in their rules.

The following summarizes the NRC's rule change that MDH proposes to incorporate in this rule revision:

Medical Use of Byproduct Material - Authorized User Clarification posted in the Federal Register, 74 FR 33901, the effective date confirmed in 74 FR 43619. This revision allows individuals who do meet the current requirements for the training and experience for the medical use of byproduct material to be grandfathered to serve as preceptors and

experience supervisors for individuals seeking recognition on licenses for the same medical uses of byproduct material.

The current regulations do not specifically state that grandfathered individuals can be preceptors and experience supervisors. This revision amends the regulations to clarify that all individuals grandfathered under the applicable regulations may serve in those capacities.

A detailed summary and discussion of the NRC change can be found in the *Federal Register* pages listed above, which can be accessed online from the Government Printing Office, *Federal Register* website at http://www.gpoaccess.gov/fr/index.html. [From the main page, perform a page number search; highlight the desired volume (number preceding FR), and enter the page number (number following FR)].

In addition to the above, the Department proposes changes that address qualification for nuclear medicine technologists, clarify existing requirements, and correct editorial issues. Those proposed changes are listed below.

ALTERNATIVE FORMAT

Upon request, this Statement of Need and Reasonableness can be made available in an alternative format, such as large print, Braille, or cassette tape. To make such a request, please contact:

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STATUTORY AUTHORITY

Minnesota Statutes, sections 144.1202 and 144.1203 authorize the Department to enter into an agreement with the NRC to assume regulatory authority over certain nuclear materials. These sections also authorize rulemaking to allow Minnesota to assume regulatory authority under the agreement with the NRC. This rulemaking amends rules adopted since 1995. Previous rulemaking satisfied the requirements of *Minnesota Statutes*, section 14.125, so the Department retains its rulemaking authority.

REGULATORY ANALYSIS

The Department is amending its rules to correct errors; address inconsistencies; remove redundant language; re-institute rules for the control of aerosols and gases; reflect recent NRC regulation changes; and address qualifications for nuclear medicine technologists. These changes maintain standards necessary to promote and protect the radiological health and safety of the public, employee's health and safety, and the safety of the environment. The proposed rule changes establish requirements that are an integral element in the Agreement State process.

Minnesota Statutes, section 14.131, sets out seven factors for a regulatory analysis that must be included in the SONAR. Paragraphs (1) through (7) below quote these factors and then provide the agency's response.

"(1) a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule."

The rules in general affect MDH radioactive material licensees. The extent to which the proposed changes will affect a licensee will depend on the type of license the licensee has and the material it possesses.

The rules about the medical use of radioactive material affect individuals who seek training and experience to become authorized users of radioactive materials. The applicable rule changes are intended to increase the number of preceptors and experience supervisors.

The rules for nuclear medicine technologists affect individuals (other than physicians) who administer radiopharmaceuticals and related drugs to human beings for diagnostic and therapy purposes, perform *in vivo* and *in vitro* detection, and measure radioactivity. The requirements establish standards for training that are intended to enhance the quality of medical care. Because the majority of nuclear medicine technologists are currently accredited and because the changes include "grandfather" provisions, the costs should be negligible.

The remaining rule changes are editorial in nature or to clarify existing requirements, so no additional costs are anticipated.

Ultimately, the largest group affected by these rules is the Minnesota general public since the purpose of the rules is to protect both licensees and the general public from unwanted or unsafe exposures to radioactive materials.

"(2) the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues."

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The increased cost of enforcement is negligible. The cost of enforcement of the rules is already funded through annual fees, which the Minnesota Legislature established in Legislative Session. The Department will require no additional revenues to enforce these rules.

"(3) a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule."

The NRC requires that MDH adopt the proposed rules compatible NRC's regulations. MDH has little discretion in considering methods that would be less restrictive to the regulated parties. The majority of the other changes are intended to make the requirements more understandable thereby improving compliance.

"(4) a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule."

Rather than amending the rules for authorized users to maintain compatibility with the NRC and other Agreement States, the Department could terminate its agreement with the NRC, which would allow NRC to reclaim its regulatory role. If that action were taken, however, Minnesota would lose the control it holds at present and the state's licensees would pay higher fees.

On the other hand, the US Nuclear Regulatory Commission has chosen to remain silent on the training for those who administer radiopharmaceuticals and related drugs to human beings for diagnostic purposes. In 2008, however, the Minnesota Legislature augmented the requirements for technologists who operate x-ray machines. The Department's advisory committee for the use of radiation producing devices for therapy has since recommended rules for therapy technologists and dosimetrists. The Department recognizes that nuclear medicine technology would be the only medical discipline using ionizing radiation without mandated qualifications. Therefore, to maintain consistency and to ensure health and safety, the Department has opted to implement rules to address their qualifications.

The Department considered rulemaking to require all nuclear medicine technologists to be accredited by January 1, 2011. That approach, however, could have a significant negative impact on health care, particularly in rural Minnesota where the smaller labor pool could preclude having accredited technologists available. Although a licensee could request a variance in accordance with Chapter 4717 parts 7000 to 7050, the Department believed the requirement to be unnecessarily burdensome at the present. That option, however, could be re-considered during future rulemaking efforts.

"(5) the probable costs of complying with the proposed rule."

Most of the proposed changes are minor in nature and will have a nominal cost for licensees. The rules for qualifications of nuclear medicine technologists through grandfathering will have minimal or no cost because the amendment addresses "grandfathering" and because the majority of the individuals working in these positions currently meet the proposed requirements.

"(6) the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals."

If the rule changes required for compatibility are not adopted, our rules would not meet the NRC's compatibility requirements, which the State agreed to when it became an Agreement State. The NRC could ultimately end the agreement and reclaim regulatory control, costing the State the annual fees that licensees would then pay to the federal government. Also, licensees would pay more; NRC annual fees are currently 25% higher than the Minnesota fees.

If rules pertaining to nuclear medicine technologists are not adopted, the individuals administering radioactive pharmaceuticals in humans would be the sole group applying ionizing radiation that has no rules governing their qualifications. In addition to being inconsistent, the lack of qualifications fails to protect the health and safety of Minnesotans.

"(7) an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference."

The majority of the differences between the proposed rule changes and the federal regulations are those necessary to conform to Minnesota rulemaking format. The notable exception relates to rules for qualifications of nuclear medicine technologists.

COST DETERMINATION

As required by Minnesota Statues, section 14.127, MDH has considered whether the cost of complying with the proposed rules in the first year after the rules take effect will exceed \$25,000 for any small business or small city. MDH has determined that it will not. This determination mirrors the probable costs of complying with the proposed rule, as described in the Regulatory Analysis section of this SONAR on page 4.

SECTION 14.128 ANALYSIS

The Department has considered the requirements of Minnesota Statutes, section 14.128, which requires that "an agency must determine if a local government will be required to adopt or amend an ordinance or other regulation to comply with a proposed agency rule," Subdivision 1. These rules amend a regulatory framework for the Department's oversight of radioactive materials

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under its agreement with the NRC. All regulatory functions are performed within the Department of Health and do not require local government enforcement.

Furthermore, the affected licensees are parties such as hospitals and clinics, manufacturing facilities, engineering companies, and universities and colleges in Minnesota. These parties are almost exclusively privately owned entities or individuals. While there are publicly owned entities, any action required by these parties' governing boards would be ministerial in nature and not require a local government to adopt or amend an ordinance or other regulation. During the rulemaking process, the Department received no comments that suggested that the rule would be affected in such a way that would require local governments to adopt or amend any ordinance or other regulation.

LIST OF WITNESSES

MDH does not plan to call non-agency witnesses to testify if these rules were to go to a public hearing. In that event, Sherrie Flaherty, Supervisor of the Radioactive Materials Unit, Minnesota Department of Health would testify briefly about the rule amendments' development and content.

PERFORMANCE-BASED RULES

As stated above, the proposed rules are based on federal regulations that the Department is contractually required to adopt. The Department thus has little flexibility in designing these rules.

ADDITIONAL NOTICE

The Department will provide all notices required by statute. The proposed rules and Notice of Intent to Adopt will be sent to everyone who has registered to be on the Department's rulemaking mailing list under Minnesota Statutes, section 14.14, subdivision 1a. We will also give notice to the Legislature per Minnesota Statutes, section 14.116.

At the time the Notice of Intent to Adopt in the State Register, the Department will provide a copy of the Notice to the 182 facilities that have an MDH-specific radioactive materials license and the 62 that have a general license that requires registration. The notice will also be posted on the Radioactive Materials page of the MDH website, with a link from the MDH homepage. The facilities that will receive a mailed notice include medical facilities, colleges and universities, research facilities, and industrial users.

RULE-BY-RULE ANALYSIS

As previously indicated, the proposed rule changes are essentially those of the U.S. Nuclear Regulatory Commission. The NRC categorizes rules that are adopted by states as A, B, C, D, or Health and Safety (H&S). The following describes the NRC's various categories:

- A = Basic radiation protection standard or related definitions, signs, labels, or terms necessary for the common understanding of radiation principles. The state program should be essentially identical to that of the NRC.
- B = Program element with significant direct trans-boundary implications. ("Transboundary" means across state lines where other states or the US Nuclear Regulatory Commission have regulatory authority.) The state program element should be essentially identical to that of the NRC.
- C = Program element, the essential objectives of which should be adopted by the state to avoid conflicts, duplications, or gaps. The manner in which the essential objectives are addressed need not be the same as the NRC, provided the essential objectives are met.
- D = Not required for compatibility purposes.
- H&S = Program element with a particular health and safety significance. The state should adopt the essential objectives of such program elements to maintain an adequate program.

A table correlating the NRC rules to the proposed rule changes and indicating the compatibility level of each rule is included as Exhibit 1 of this SONAR.

The following changes are MDH-initiated rather than being NRC-driven.

4731.2320. Exceptions to Posting Requirements.

Subpart 4. Currently the only exception to the requirement to post a room with caution signs applies to teletherapy units. This change expands the exceptions to include other therapy applications. Postings in these environments can unnecessarily create additional concern or stress for patients undergoing medical treatment.

4731.2360 Leak Test Requirements.

Subpart 5. The current reporting requirement for a leaking source is the same as a medical event, which is unnecessarily stringent if the licensee takes the actions required in other portions of this rule part. Therefore, the Department can loosen this requirement without jeopardizing public health. This change clarifies the reporting requirements by eliminating reference to another rule, relaxes that reporting requirement, and indicates the specific information required.

In addition, during the 90-day Request for Comment period, a Medical Physicist who reviewed the proposed regulation requested that an "and" should be inserted at the end of item A to indicate a continuation of the intended requirements.

4731.2510 Records; Surveys.

Subpart 1 is being changed because the current rule fails to appropriately address both uses of survey meters (i.e., radiation and contamination). The Department has, therefore, made those uses explicit.

Subpart 3 is being added because during the 90-day Request for Comment period a Broad Scope licensee requested that the rule be amended to accommodate the numbering system they currently use. At least two other licensees use unique identification systems. This additional subpart will eliminate the need for licensees to revamp their tracking systems.

4731.2520 Determination of Prior Occupational Dose.

Subpart 4. During the last rulemaking effort, the language inserted in Item A was inadvertently retained in Items C, D, and E. This change corrects that issue.

4731.2650 Reports; Individual Monitoring

During the 90-day Request for Comment period, an industrial radiography licensee requested that the annual reporting requirement be deleted. This rule is a "D" Compatibility, which means that MDH has the authority to eliminate the requirement. Because radiography licensees are inspected annually, this requirement seems redundant. The other changes are editorial.

4731.4070 Leak Testing, Replacement, and Other Modifications of Sealed Sources.

Subpart 3. Replacing the reference to another rule with the requirements makes referencing by industrial radiographers easier. This change clarifies the reporting requirements by eliminating reference to another rule, relaxes that reporting requirement to be consistent with those of 4731.2360 (above), and specifies the information required to be reported to the Department.

4731.4350 Notifications.

Subpart 1. Immediate notification required;

- Subpart 2. 24-hour notification required;
- Subpart 3. Preparation and submission of notifications;
- Subpart 4. Reports required; and

Subpart 5. Reporting unlisted use.

The current rule references requirements in 4731.3110. Under stressful conditions that require notification of accidents, however, licensees fail to note them. Consequently, the

essential 24-hour notifications are not made. In addition, the language in 4731.3110 does not clearly require reporting of a source disconnects or stuck sources. In addition to specifying that licensees must report source disconnects and stuck sources, the change eliminates reference to 4731.3110 and incorporates those requirements in this rule part.

The Department maintains response capabilities to assist or investigate industrial radiography incidents. Licensees are required to identify underlying causes and develop corrective actions. In addition, the Department, other agreement States, the US Nuclear Regulatory Commission must enter industrial radiography incidents as well as other events involving nuclear material into the NRC's Nuclear Material Events Database (NMED). Regulators, licensees, and equipment manufacturers use this national tracking system to identify potential problems, track trends, and to develop corrective actions.

4731.4411 Radiation Safety Officer Training

This requirement and several of the following requirements are being amended to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced individuals. The specific authorization is referenced in the proposed change to 4731.4414.

4731.4412 Authorized Medical Physicist Training

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced medical physicists. The specific authorization is referenced in the proposed change to 4731.4414.

4731.4414 Training: Experienced Radiation Safety Officer, Teletherapy or Medical Physicist, Authorized User, and Nuclear Pharmacist.

Item E is being added to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule. As indicated above, the change allows "grandfathering" of experienced individuals to serve as preceptors.

4731.4430 Control of Aerosols and Gases.

Subpart 1. Collection system;

Subpart 2. System vented or system collection;

Subpart 3. Negative pressure required;

Subpart 4. Calculation needed after a release;

Subpart 5. Posting time needed after a release; Subpart 6. Monthly check on collection system; and Subpart 7. Records retention.

The NRC eliminated the language addressing aerosols and gases several years ago. MDH has found, however, that, without specific requirements, some facilities do not understand and have not appropriately executed the necessary safety precautions. The requirements are being re-incorporated in rule.

4731.4433 Uptake, Dilution, and Excretion studies; Training

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced authorized users. The specific authorization is referenced in the proposed change to 4731.4414.

4731.4436 Imaging and Localization Studies; Training

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced authorized users. The specific authorization is referenced in the proposed change to 4731.4414.

4731.4443 Unsealed Radioactive Materials; Written Directive Required; Training The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced authorized users. The specific authorization is referenced in the proposed change to 4731.4414. In addition, the last rulemaking effort included an "or" that was inadvertently omitted during the process.

4731.4444 Oral Administration of Sodium Iodide I-131; Quantities Less Than or Equal to 33 Millicuries (1.22 GBq); Written Directive Required

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced

authorized users. The specific authorization is referenced in the proposed change to 4731.4414.

4731.4445 Oral Administration of Sodium Iodide I-131; Quantities Greater Than 33 Millicuries (1.22 GBq); Written Directive Required

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced authorized users. The specific authorization is referenced in the proposed change to 4731.4414.

4731.4446 Parenteral Administration of Unsealed Radioactive Material; Written Directive Required

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced authorized users. The specific authorization is referenced in the proposed change to 4731.4414.

4731.4458 Manual Brachytherapy Training

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced authorized users. The specific authorization is referenced in the proposed change to 4731.4414.

In addition, during the 90-day Request for Comment period, the NRC identified a discrepancy. The current rule incorrectly refers to *postgraduate* training. The correction changes the reference to *postdoctoral* training.

4731.4459 Ophthalmic Use of Strontium-90; Training

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced authorized users. The specific authorization is referenced in the proposed change to 4731.4414.

4731.4479 Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units; Training

The Department is amending this requirement to maintain compatibility with the NRC and other Agreement States. The NRC has assigned a Compatibility Category B for this rule, which essentially permits individuals who do not meet current training standards but have gained significant practical experience to act as a preceptor for less experienced authorized users. The specific authorization is referenced in the proposed change to 4731.4414.

In addition, during the 90-day Request for Comment period, the NRC identified a discrepancy. The current rule incorrectly refers to *postgraduate* training. The correction changes the reference to *postdoctoral* training.

4731.4525 Medical Event; Report and Notification

Subpart 3. 24-hour notification required. This is only an editorial change. The language being replaced is essentially the same; however, it is being changed to be consistent with other rules.

4731.4526 Dose to an embryo/fetus or child; report and notification

Subpart 3. As in the previous rule, the language being replaced is essentially the same. It is being changed, however, to be consistent with other rules concerning reporting of events.

Rationale for the rule parts below. The following rules implement requirements for nuclear medicine technologists. Except for a licensed practitioner of the healing arts, there currently are no requirements for individuals who administer radiopharmaceuticals and related drugs to human beings for diagnostic purposes, perform in vivo and in vitro detection and measurement of radioactivity, and administer radiopharmaceuticals to human beings for therapeutic purposes.

The Minnesota legislature approved a qualification process for x-ray technologists in 2008. In addition, the MDH advisory group for therapy using radiation-producing machines is recommending implementation-training requirements for therapy technologists and dosimetrists. Without the following proposed rules, that action would leave the nuclear medicine technologists as the only group without training requirements.

MDH generated the following rule parts using sources that include the American Association of Medical Physicists (AAPM), the American Registry of Radiologic Technologists (ARRT), and the Conference for Radiological Control Program Directors (CRCPD).

4731.4600 Definition

Subpart 1. Nuclear Medicine technologist; and Subpart 2. Accredited.

4731.4605 Minimum standards for nuclear medicine technologists

Subpart 1. General requirements; and Subpart 2. Accreditation required

After the initial comment period, MDH modified the proposed rule to address records retention.

4731.4610 Exceptions

During the 90-day Request for Comment period, a licensee requested changes in the training requirements to eliminate confusion and to make the training consistent with the requirements for accredited nuclear medicine technologists. The Department agreed that the changes should be made. The Department determined, however, that the changes could not be addressed in the current format. It therefore created a separate rule part and moved much of the proposed rule to 4731.4612.

4731.4612 Training for Individuals Functioning as Nuclear Medicine Technologists Before January 1, 2011 Who Are Not Accredited

The requirements in Subparts 1 and 2 have been moved from the previous rule part. During the 90-day Request for Comment period a licensee requested that the rule be changed because it was unclear if an individual in training could function independently. Subpart 3 was added to address that concern. The change requires direct supervision until a license-authorized user deems the individual competent.

In addition, during the 90-day Request for Comment period a licensee requested the language in Subpart 4 to eliminate the disparity in continuing education requirements. 4731.4600 requires that accredited individuals maintain their accreditation. To do so, those individuals must obtain 24 continuing-education credits in 24 months. Before the change, no such requirement applied to the non-accredited individuals working as nuclear medicine technologists.

4731.4615 Documentation of Competency

Subpart 1. Nuclear medicine technologist; January 1, 2011;

Subpart 2. Who can document competency;

Subpart 3. Procedures and equipment; and

Subpart 4. Records retention

4731.4620 Requirements for Operators of Fusion Imaging Devices

Subpart 1. Accreditation required and Subpart 2 CT imaging devices

The proposed rule has been amended because the American Registry of Radiologic Technologists has adopted the convention of addressing this technology as "fusion imaging." The proposed rule has also been changed to authorize operation by individuals who meet the applicable condition in Chapter 4732. Finally, Subpart 2 was changed to clarify that if a CT unit is used solely as a diagnostic CT-imaging device, the operator must meet the requirements of Chapter 4732.

LIST OF EXHIBITS

1. Correlation of Department Rules to NRC Regulations and Compatibility Classification

CONCLUSION

Based on the foregoing, the proposed rule changes are both needed and reasonable.

Commissioner.

Minnesota Department of Health

Exhibit 1

Correlation of Department Rules to NRC Regulations and Compatibility Classification

MN Rule Part	Title	10 CFR	Compatibility
4731.2320	Exceptions to posting requirements	20.1903	D
4731.2360	Leak Test Requirements	N/A	N/A
4731.2510	Records; Surveys	20.2301	D
4731.2520	Determination of prior occupational dose	20.2104	D
4731.2650	Reports; Individual Monitoring	20.2206	D
	Leak testing, replacement, and other modifications of		
4731.4070	sealed sources	34.27	С
4731.4350	Notifications	34.101	C
4731.4411	Radiation Safety Officer Training	35.50	B *
4731.4412	Authorized Medical Physicist Training	35.51	В
4731.4414	Training; Experienced Radiation Safety Officer,		
	Teletherapy or Medical Physicist, Authorized User, and	05.55	
	Nuclear Pharmacist	35.57	B
4731.4430	Control of aerosols and gases	N/A	N/A
4731.4433	Uptake, Dilution, and Excretion Studies; Training	35.190	В
4437.4436	Imaging and Localization Studies; Training	35.290	B .
4721 4442	Unsealed radioactive material; written directive required;	25.200	D
4731.4443	training Oral Administration of Sodium Iodide-131; Quantities	35.390	В
	less than or Equal to 33 Millicuries (1.22 GBq); Written		
4731.4444	Directive Required; Training	35.392	В
	Oral Administration of Sodium Iodide-131; Quantities		
	Greater than 33 Millicuries (1.22 GBq); Written		
4731.4445	Directive Required; Training	35.394	В
	Parenteral Administration of Unsealed Radioactive		_
4731.4446	Material; Written Directive Required; Training	35.396	В
4731.4458	Manual Brachytherapy Training	35.490	В
4731.4459	Ophthalmic Use of Strontium-90; Training	35.491	В
4721 4470	Remote Afterloader Units, Teletherapy Units; and	25 (00	D
4731.4479	Gamma Stereotactic Radiosurgery Units; Training	35.690	B
4731.4525	Medical event; report and notification	35.3045	D
4731.4526	Dose to an embryo/fetus or child; report and notification	35.3047	C
4731.4600	Definitions	N/A	N/A
4731.4605	Minimum standards for nuclear medicine technologists	N/A	N/A
4731.4610	Exceptions	N/A	N/A

	Training for Individuals Functioning as Nuclear	N/A	N/A ·
	Medicine Technologists Before January 1, 2011 Who		
4731.4512	Are Not Accredited		
4731.4615	Documentation of Competency	N/A	N/A
4731.4620	Requirements for operators of dual imaging equipment	N/A	N/A