



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

July 23, 1997

Mr. Thomas Ortziger, Director  
Illinois Department of Nuclear Safety  
1035 Outer Park Drive  
Springfield, IL 62704

Dear Mr. Ortziger:

Given the significance of the revised 10 CFR Part 20 rule to both NRC and Agreement State programs, NRC undertook a review of all Agreement State final Part 20 equivalent rules for compatibility with 10 CFR Part 20. The review was conducted as a two step process. The first step involved a review by Oak Ridge National Laboratory (ORNL), under contract with NRC, to identify any differences or inconsistencies between 10 CFR Part 20 and each Agreement State equivalent rule. A copy of the two volume ORNL report, dated January 18, 1995, documenting its staff review of the Illinois final 10 CFR Part 20 equivalent rule, is enclosed for your information and use (Enclosure 1). The second part of the review was conducted by NRC staff and consisted of a review of the differences and inconsistencies identified by ORNL for compatibility and adequacy significance.

The NRC review focused on those provisions of your rule that are required for compatibility or for health and safety under the new adequacy and compatibility policy statement approved by the Commission by Staff Requirements Memorandum dated June 30, 1997 (Enclosure 2 describes the new compatibility categories). Enclosure 3 provides our comments on the State's regulations and shows the current compatibility divisions (i.e., 1 and 2) and the corresponding new compatibility categories (i.e., A, B, C, D, NRC, and H&S). There are three provisions, as noted in Enclosure 3, that are not compatible with 10 CFR Part 20 under current compatibility procedures. We note, however, that in the final Integrated Materials Performance Evaluation Program (IMPEP) Report, that the Management Review Board (MRB) found the Illinois Agreement State program compatible and recommended that the NRC staff re-evaluate the compatibility classification for one of the provisions under the new adequacy and compatibility policy statement. This provision is the Part 340.30 definition of "declared pregnant woman." These MRB findings and discussions resolved all issues related to Illinois' definition of "declared pregnant woman" and "dose to an embryo/fetus." The only remaining issue to be resolved is the definition of "Generally Applicable Environmental Standards."

Within 45 days, we request that you respond in writing with information describing the actions you plan to take to address the omission of the definition of "Generally Applicable Environmental Radiation Standards" from the Illinois regulations. As you are aware, Agreement States have flexibility to adopt rules required for compatibility in the form of legally binding requirements other than regulations. This methodology may be appropriate to resolve compatibility issues raised with Illinois' regulations.



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JUL 23 1997

Finally, implementation procedures for the new policy statement provide guidance that indicates Agreement State rules should conform with the new policy not later than 3 years after the policy's effective date.

If you have any questions regarding these comments, the compatibility criteria, the NRC regulations used in the review, or the Oak Ridge report, please contact me at (301) 415-2326 or Jim Lynch, Regional State Agreements Officer, at (630) 829-9661, or INTERNET: JLL2@NRC.GOV.

Sincerely,

A handwritten signature in dark ink, appearing to read "Paul H. Lohaus". The signature is fluid and cursive, with the first name "Paul" being the most prominent.

Paul H. Lohaus, Deputy Director  
Office of State Programs

Enclosures:  
As stated

cc: Paul Eastvold, IDNS  
Steve Collins, IDNS

Thomas Ortziger

- 2 -

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Sincerely,

Original Signed By:  
PAUL H. LOHAUS

Paul H. Lohaus, Deputy Director  
Office of State Programs

Enclosures:  
As stated

cc: Paul Eastvold, IDNS  
Steve Collins, IDNS

Distribution:  
DIR RF  
SDroggitis  
KNSchneider  
Illinois File

DCD (SP07)  
PDR (YES ☒ NO ☐)

Part 20 File w/o ORNL Report

DOCUMENT NAME: G:\CHM\PART20\ILREVIEW.20 \*See Previous Concurrence.

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OFFICE	REG III	OSP	OSP:DD	OGC	OSP:D
NAME	JLynch:nb:kk	CMAupin	PHLohaus	FCameron	RLBangart
DATE	05/21/97*	05/28/97* 7/21/97* 7/22/97	05/29/97* 07/02/97* 07/08/97*	06/04/97*	07/22/97*

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SP-P-1

Compatibility Category and H&S Identification  
for NRC Regulations

Key to categories:

- A = Basic radiation protection standard or related definitions, signs, labels or terms necessary for a common understanding of radiation protection that the State should adopt with (essentially) identical language.
- B = Program element with significant direct transboundary implications that the State should adopt with essentially identical language.
- 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 NRC provided the essential objectives are met.
- D = Not required for purposes of compatibility; however, if adopted by the State, should be compatible with NRC.
- NRC = Not required for purposes of compatibility; the regulatory area is reserved to NRC. However, a State may adopt these provisions for purposes of clarity and communication, as long as the State does not adopt regulations or program elements that would cause the State to regulate in these areas.
- H&S = Program elements identified as H&S are not required for purposes of compatibility; however, they do have particular health and safety significance. The State should adopt the essential objectives of such program elements in order to maintain an adequate program.

NRC Comments on the Illinois Administrative Code Title 32: Energy Chapter II:  
Department of Nuclear Safety Subchapter b: Radiation Protection Parts 310 and 340, Regulations  
Required Required for Compatibility or Health and Safety

<u>Division (New Category)</u>	<u>State Regulation</u>	<u>NRC Regulation</u>	<u>Subject and Comments</u>
1 (A)	Omitted	20.1003	The definition of "Generally Applicable Environmental Radiation Standards" was omitted from the Illinois 10 CFR Part 20-equivalent regulations. The term is used in Part 340.1230 "Reports of Exposures, Radiation Levels and Concentrations of Radioactive Material Exceeding the Limits."
1 (A)	340.30	20.1003	The definition of "declared pregnant woman" is a compatibility Category A. The Illinois equivalent definition contains provisions allowing a woman to declare her pregnancy but not provide an estimated date of conception.
1 (A)	340.280	20.1208	The section "dose to an embryo/fetus" is a compatibility Category A and is associated with the definition of "declared pregnant woman" discussed above. The Illinois equivalent regulation describes methods for dealing with situations when a woman withholds the estimated date of conception.

Thomas Ortziger

- 2 -

legally binding requirements other than regulations. This methodology may be appropriate to resolve compatibility issues raised with Illinois' regulations.

Finally, implementation procedures for the new policy statement provide guidance that indicates Agreement State rules should conform with the new policy not later than 3 years after the policy's effective date.

If our comments need clarification, please contact me at (301) 415-2326 or Jim Lynch, Regional State Agreements Officer, at (630) 829-9661.

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Distribution:  
DIR RF  
SDroggitis  
KNSchneider  
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DCD (SP07)  
PDR (YES ☒ NO ☐)

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State Programs. Implementing procedures for this new policy statement indicate that incompatible Agreement State rules should conform with the new policy not later than three years after the policy's effective date.

Please note that under the compatibility categories for the new adequacy and compatibility policy statement, all three of the provisions are identified as compatibility category A. Category A means that a State should adopt the requirements using essentially identical language. As you may be aware, Agreement States have flexibility to adopt rules required for compatibility in the form of legally binding requirements other than regulations. This methodology may be appropriate to resolve the compatibility issues raised with Illinois' regulations.

If our comments need clarification, please contact me at (301) 415-2326 or Jim Lynch, Regional State Agreements Officer, at (630) 829-9661.

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Mr. T. Ortziger

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Dear Mr. Ortziger:

We have completed a review of the Illinois Rules, 32 Ill. Adm. Code Parts 310 and 340, for compatibility with equivalent NRC regulations contained in the Code of Federal Regulations, Title 10, "Energy," Chapter I, "Nuclear Regulatory Commission, Parts 0-199. We indicated in the draft IMPEP Report, dated April 25, 1997, that the IMPEP review team was not able to find the Illinois regulations compatible. Two 10 CFR Part 20-equivalent regulations, Part 340.30 definition of "Declared Pregnant Woman" and 340.280 "Dose to an Embryo/Fetus" were identified as compatibility issues. In addition, this review of Illinois' 10 CFR Part 20-equivalent regulations identified one new comment having compatibility significance and is identified in the enclosure.

As you are aware, Agreement States have flexibility to adopt rules required for compatibility in the form of legally binding requirements, as opposed to regulations. This method was used by Illinois to achieve compatibility with the Emergency Planning and Irradiator rules. This methodology may be appropriate to resolve some of the compatibility issues raised during the review and in the enclosure.

If our comments need clarification, please contact me at (301) 415-2326 or Jim Lynch, RSAO, at (630) 829-9661.

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DATE	05/21/97	05/28/97	05/24/97	05/14/97	05/ /97

OSP FILE CODE: SP-AG-8

*with Revision*



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If our comments need clarification, please contact me at (301) 415-2326 or Jim Lynch, RSAO, at (630) 829-9661.

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# REVIEW OF ILLINOIS PART 20 EQUIVALENT REGULATIONS

May 1997

## EXPLANATION OF ENTRIES UNDER "Compatible"

[Y] means the definition or rule is determined to be compatible with 10 CFR Part 20

[N] means the definition or rule is determined to be NOT compatible with 10 CFR Part 20

<u>Designation</u>	<u>Definition</u>	<u>NRC Section</u>	<u>State Section</u>	<u>Compatible</u>
A	Absorbed dose	20.1003	310.20	[Y]
A	Activity	20.1003	310.20	[Y]
A	Adult	20.1003	310.20	[Y]
A	Airborne radioactive material	20.1003	310.20	[Y]
A	Airborne radioactivity area	20.1003	310.20	[Y] 1
A	ALARA	20.1003	310.20	[Y]
A	Annual limit on intake (ALI)	20.1003	340.30	[Y]
A	Background radiation	20.1003	310.20	[Y] 2
A	Bioassay	20.1003	310.20	[Y]
A	Byproduct material	20.1003	310.20	[Y]
A	Class (lung class or inhalation class)	20.1003	340.30	[Y]
A	Collective dose	20.1003	310.20	[Y]
A	Committed dose equivalent	20.1003	310.20	[Y] #
A	Committed effective dose equivalent	20.1003	310.20	[Y] #
D	Controlled area	20.1003	Omitted	[Y] 3 @
A	Declared pregnant woman	20.1003	340.30	[N] 4

**Rule Review: Illinois Part 20 equivalent compatibility rules**

<u>Designation</u>	<u>Definition</u>	<u>NRC Section</u>	<u>State Section</u>	<u>Compatible</u>
A	Deep dose equivalent	20.1003	310.20	[Y] #
A	Derived air concentration (DAC)	20.1003	340.30	[Y]
A	Derived air concentration-hour (DAC-hour)	20.1003	340.30	[Y] +
D	Dose	20.1003	310.20	[Y]
A	Dose equivalent	20.1003	310.20	[Y] 5 #
A	Dose limits {limits}	20.1003	310.20	[Y]
D	Dosimetry processor	20.1003	340.30	[Y]
A	Effective dose equivalent	20.1003	310.20	[Y] #
A	Embryo/fetus	20.1003	310.20	[Y]
C	Entrance or access point	20.1003	310.20	[Y] +
A	Exposure	20.1003	310.20	[Y] :
A	External dose	20.1003	310.20	[Y]
A	Extremity	20.1003	310.20	[Y]
A	Eye dose equivalent	20.1003	310.20	[Y]
A/D*	Generally applicable environmental radiation standards	↓ ↓ 20.1003	Omitted	[N] 7
*(A for states with authority to regulate uranium mill activity, D for states without authority)				
A	Gray	20.1004	310.20	[Y]
A	High radiation area	20.1003	310.20	[Y]
A	Individual	20.1003	310.20	[Y]
A	Individual monitoring	20.1003	310.20	[Y]
C	Individual monitoring devices	20.1003	310.20	[Y] 8
A	Internal dose	20.1003	310.20	[Y]
D	Licensed [or registered] material	20.1003	310.20	[Y] @+
B	Lost or missing licensed [or registered] source of radiation {material}	↓ ↓ 20.1003	310.20	[Y]
A	Member of the public	20.1003	310.20	[Y] 9
A	Minor	20.1003	310.20	[Y]
A	Monitoring	20.1003	310.20	[Y]
A	Nonstochastic effect	20.1003	340.30	[Y]
A	Occupational dose	20.1003	310.20	[Y] 10

**Rule Review:** Illinois Part 20 equivalent compatibility rules

<u>Designation</u>	<u>Definition</u>	<u>NRC Section</u>	<u>State Section</u>	<u>Compatible</u>
D	Planned special exposure	20.1003	340.30	[Y]
A	Public dose	20.1003	310.20	[Y]
A	Quality factor	20.1003	310.20	[Y]
D	Quarter	20.1003	Omitted	[Y] @
A	Rad	20.1004	310.20	[Y]
A	Radiation	20.1003	310.20	[Y]
A	Radiation area	20.1003	310.20	[Y]
A	Reference Man	20.1003	340.30	[Y]
A	Rem	20.1004	310.20	[Y]
C	Respiratory protective equipment {device}	20.1003	340.30	[Y]
A	Restricted area	20.1003	310.20	[Y]
A	Sanitary sewerage	20.1003	340.30	[Y] +
A	Shallow dose equivalent	20.1003	310.20	[Y] #
A	Sievert	20.1004	310.20	[Y]
D	Site boundary	20.1003	Omitted	[Y] @
A	Source material	20.1003	310.20	[Y]
A	Special nuclear material	20.1003	310.20	[Y]
A	Stochastic effect	20.1003	340.30	[Y]
A	Survey	20.1003	310.20	[Y]
A	Total effective dose equivalent (TEDE)	20.1003	310.20	[Y]
A	Unrestricted area	20.1003	310.20	[Y] 11
A	Very high radiation area	20.1003	340.30	[Y]
D	Week	20.1003	310.20	[Y]
A	Weighting factor $w_T$	20.1003	340.30	[Y] #
A	Whole body	20.1003	310.20	[Y]
A	Working level (WL)	20.1003	310.20	[Y]
A	Working level month (WLM)	20.1003	310.20	[Y]
A	Year	20.1003	310.20	[Y] 12

**Rule Review:** Illinois Part 20 equivalent compatibility rules

<u>Div</u>	<u>Designation</u>	<u>NRC rule</u>	<u>Rule subject</u>	<u>State Rule</u>	<u>Compatible</u>
1	A	20.1004	Units of radiation dose	310.140	[Y] #+
1	A	20.1005	Units of radioactivity	310.150	[Y]
2	D	20.1008(b - e)	Implementation, general	340.40	[Y] +
2	D	20.1101	Radiation protection programs	340.110	[Y] +
1	A	20.1201	Occupational dose limits for adults	340.210	[Y]
1	A	20.1202	Requirements for summation of external and internal doses	340.220	[Y] 13 #+
1	A	20.1203	Determination of external dose from airborne radioactive material	340.230	[Y] +
1	A	20.1204(except c)	Determination of internal exposure	340.240	[Y] 14
2	A	20.1204©	Information on internal exposure	340.240	[Y]
1	D	20.1206	Planned special exposures	340.260	[Y] @+
1	A	20.1207	Occupational dose limits for minors	340.270	[Y]
1	A	20.1208	Dose to an embryo/fetus	340.280	[N] 15
1	A	20.1301(a, b)	Dose limits for individual members of the public	340.310	[Y] 16+
1	D	20.1302	Compliance with dose limits for individual members of the public	340.320	[Y] @+
2	D	20.1501(a, b)	Surveys and monitoring - general	340.510	[Y] @

**Rule Review:** Illinois Part 20 equivalent compatibility rules

<u>Div</u>	<u>Designation</u>	<u>NRC rule</u>	<u>Rule subject</u>	<u>State Rule</u>	<u>Compatible</u>
1	D	20.1501©	NVLAP requirement	340.510	[Y]
2	D	20.1502	Conditions requiring individual monitoring of external and internal occupational dose	340.520	[Y] +
1	D	20.1601(a - d)	Control of access to high radiation areas	340.610	[Y] 17 @+
2	D	20.1601(e)	Control not required for DOT package	340.610	[Y]
2	D	20.1601(f)	Control not required for hospital rooms and areas	340.610	[Y] +
1	D	20.1602	Control of access to very high radiation areas	340.620	[Y]
1	D	20.1701	Use of process or other engineering controls	340.710	[Y] +
1	D	20.1702	Use of other controls	340.720	[Y] +
1	D	20.1703	Use of individual respiratory protection equipment	340.730	[Y] +
2	D	20.1801	Security of stored sources of radiation	340.810	[Y] @+
2	D	20.1802	Control of material not in storage	340.810	[Y] @+
1	A	20.1901	Caution signs	340.910	[Y] 18
1	A	20.1902	Posting requirements	340.920	[Y] +
1	A	20.1904	Labeling containers	340.940	[Y] +
1	A	20.1905	Exceptions to labeling requirements	340.950	[Y] 19+
2	D	20.1906	Procedures for receiving and opening packages	340.960	[Y] @+

**Rule Review:** Illinois Part 20 equivalent compatibility rules

<u>Div</u>	<u>Designation</u>	<u>NRC rule</u>	<u>Rule subject</u>	<u>State Rule</u>	<u>Compatible</u>
2	C	20.2001	Waste disposal - general requirements	340.1010	[Y] 20+
2	D	20.2002	Method for obtaining approval of proposed disposal procedures	340.1020	[Y] +
2	A - (a)(2) & (3) C - (a) (4) D - (a)(1) & (b)	20.2003	Disposal by release into sanitary sewerage	340.1030	[Y] 21+
2	B	20.2006	Transfer for disposal and manifests	340.1060	[Y]
1	D (C if state adopts "planned special exposure")	20.2104(except f)	Determination of prior occupational dose	340.250	[Y] @+
2	C	20.2201(except c)	Reports of Stolen, Lost, or Missing Licensed or Registered Sources of Radiation	340.1210	[Y] 22
1	C	20.2202(except e)	Notification of Incidents	340.1220	[Y] 23
2	C - (a), (b) D - (d) NRC - ©	20.2203	Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Limits	340.1230	[Y] 24+
2	D	20.2204	Reports of Planned Special Exposures	340.1240	[Y] +
1	C	20 Appendix A	Protection Factors for Respirators	340.25	[Y]
1	A	20 Appendix B	ALI's and DAC's; effluent concentrations; concentrations for release to sewerage	340.25	[Y]
1	A	20 Appendix C	Quantities of licensed material requiring labeling	340.25	[Y]

**Rule Review:** Illinois Part 20 equivalent compatibility rules

<u>Div</u>	<u>Designation</u>	<u>NRC rule</u>	<u>Rule subject</u>	<u>State Rule</u>	<u>Compatible</u>
2	B	20 Appendix F	LLW transfer for disposal and manifests	340.25	[Y]

**Rule Review:** [ Agreement State ] Part 20 equivalent compatibility requirements

<u>Designation</u>	<u>Definition</u>	<u>NRC Section</u>	<u>State Section</u>	<u>Compatible</u>
--	Becquerel	20.1005	310.20	[Y]
--	Curie	20.1005	310.20	[Y]
--	U.S. Department of Energy {Department}	20.1003	310.20	[Y]

<u>Div</u>	<u>Designation</u>	<u>NRC rule</u>	<u>Rule subject</u>	<u>State Rule</u>	<u>Compatible</u>
2	--	20.1603	Control of access to very high radiation areas - irradiators	340.630	[Y]

**NOTES:**

General Comments

- # IDNS regulations use a coding convention for superscripts "( )" and subscripts "[ ]". The official version of the regulations, with the Coding Division of the Secretary of State's office, contains an explanation of the convention. See ORNL Major Point 4.
- @ New compatibility category D. Not a compatibility issue.
- + Illinois does not "register" radioactive materials. The omission of the term "registered" in IDNS regulations is not a compatibility concern. This issue is addressed in ORNL Major Point 1.

Specific Comments

1. Definition "Airborne radioactivity area" (Division 1)  
IDNS interpretation of "operating area" is not more limiting than the NRC definition. A compatibility ruling was made in the September 7, 1995

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letter to the State.

2. Definition "Background radiation" (Division 1)  
IDNS substitutes "radioactive materials" for "source, byproduct or special nuclear materials" as stated in 10 CFR 20.1003. No significant difference.
3. Definition "Controlled area" (Division 1)  
The State has chosen not to adopt the "controlled area" concept. This is not a compatibility issue. See ORNL Major Point 2.
4. Definition "Declared pregnant woman" (Division 1)  
The definition of "declared pregnant woman" contains a clause allowing a woman to declare her pregnancy but not provide an estimated date of conception. Section 340.280 describes methods for dealing with situations when a woman withholds the estimated date of conception. Both the 340.30 definition and 340.280 are compatibility Division 1 (Category A) regulations and are not compatible with NRC regulations. This compatibility concern was communicated to IDNS in the September 7, 1995 letter from NRC and in the April 25, 1997 draft IMPEP report.
5. Definition "Dose equivalent" (Division 1)  
The State adds a parenthetical example of a modifying factor "(e. g., a distribution factor for non-uniform deposition)" to the definition of dose equivalent. As modifying factors are not currently used in determining dose equivalent, the addition of the example has no effect on compatibility.
6. Definition "Exposure" (Division 1)  
The State provides two definitions for "exposure" as does the SSR. The second definition is essentially identical to 10 CFR 20.1003, the first is additional non-conflicting information.
7. Definition "Generally applicable environmental radiation standards" (Division 1)  
IDNS omitted the definition of "generally applicable environmental radiation standards." The term is used in 340.1230. This is a compatibility Division 1 (Category A) regulation.
8. Definition "Individual monitoring devices" (Division 1)  
The State adds electronic dosimeters to the definition of "individual monitoring devices." This addition does not cause conflicts or gaps and is considered compatible.
9. Definition "Member of the public" (Division 1)  
IDNS defines "member of the public" to exclude an individual who is performing duties for the licensee or registrant. This definition is consistent

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with the December 1995 SSR (see "occupational dose" definition below) and is therefore compatible with 10 CFR 20.1003.

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IDNS omitted the phrase "in a restricted area or" from the definition. NRC modified the definition in 10 CFR 20.1003 in 1995 to remove the "in a restricted or" clause and therefore this portion of the IDNS definition is compatible with NRC regulations. The ORNL review of this definition also identified a difference with the SSR where IDNS limited the definition to include only individuals performing duties for the licensee or registrant. This modified definition is consistent with the December 1995 SSR (Part A) definition of "occupational dose" and is therefore compatible with NRC regulations.
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IDNS clarifies the "unrestricted area" definition to specify that the area is controlled for purposes of protection of individuals from exposure to radiation and radioactive material, and any area used for residential quarters. No conflict or gap is created by this clarification and this definition is considered compatible.
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The 10 CFR 20.1003 definition of "year" allows a licensee to change the starting date of the year used to determine compliance provided that the change is made at the beginning of the year. IDNS allows a change in the year provided that the decision to make the change is made before the end of the previous year. The change is insignificant and is considered compatible.
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340.220 is inconsistent with the SSR regarding notation of committed dose equivalent but is the same as 10 CFR 20.1202 and is therefore compatible.
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NRC's regulation comment letter dated August 12, 1993, discussed IDNS' use of the term "during normal conditions of operations" in 340.240. IDNS responded in a letter dated October 12, 1993, that the word "normal" was deleted from the final version of the rules. This addition of the term "during the conditions of operations", with "normal" eliminated, does not change the meaning of the rule and is compatible with 10 CFR 1204. The addition of the term "after exposure to materials that could result in an intake" is an insignificant clarification which does not create a conflict or gap and is therefore compatible.
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The definition of "declared pregnant woman" contains a clause allowing a woman to declare her pregnancy but not provide an estimated date of conception. Section 340.280 describes methods for dealing with situations when a woman withholds the estimated date of conception. Both the 340.30 definition and 340.280 are compatibility Division 1 (Category A) regulations and are not compatible with NRC regulations. This

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compatibility concern was communicated to IDNS in the September 7, 1995 letter from NRC and in the April 25, 1997 draft IMPEP report.

16. 340.310 "Dose limits for individual members of the public" (Division 1)  
NRC's regulation comment letter dated August 12, 1993, discussed IDNS' grandfathering of current facilities to the 0.5 rem total effective dose equivalent. IDNS modified 340.310 in 1994 to remove the grandfathering clause and is now compatible with 10 CFR 20.1301. Exclusion of radiation machines (State jurisdiction) from the limit does not affect compatibility with NRC regulations.
17. 340.610 "Control of access to high radiation areas" (Division 1)  
Discussing alternative methods for controlling access to high radiation areas, IDNS substitutes the term "to enable action to be taken to prevent" rather than NRC's "that is capable of preventing." The IDNS rule clarifies that it is not the additional surveillance that stops someone from entering a high radiation area but the follow-up actions which are initiated upon detection of someone attempting to enter the area. This rule is compatible with 10 CFR 20.1601.
18. 340.910 "Caution signs" (Division 1)  
IDNS omitted two paragraphs describing coloration of the three-bladed radiation symbol. 340.910 states, however, "shall use the colors magenta, or purple, or black on yellow background. This description of the required colors is adequate. The IDNS regulation also differs from 10 CFR 20.1901 in the Additional Information on Signs and Labels section. The NRC regulation states "...the licensee shall provide, on or near the required signs and labels, additional information, as appropriate..." The IDNS regulation uses the word may instead of the word shall. As the additional information is not required to be provided, the use of "may" instead of "shall" is appropriate and compatible.
19. 340.950 "Exceptions to labeling requirements" (Division 1)  
IDNS, by law, cannot include requirements referenced in non-specific documents such as 10 CFR or 49 CFR. If another document is referenced, it must be specifically identified with the applicable date. Referenced dates are modified in the IDNS regulations as significant changes are made to the Federal agency regulations. The regulations are essentially the same and are deemed compatible.
20. 340.1010 "Waste disposal-General requirements" (Division 2)  
This issue was addressed by IDNS in the October 12, 1993, letter to NRC. IDNS prefers to evaluate each decay-in-storage request and grant authorization by license condition. This approach meets the objective of 10 CFR 20.2001.
21. 340.1030 "Disposal by release into sanitary sewerage" (Division 2)  
Since Illinois does not have registered or "other" radioactive material (it is all licensed), the omission of these terms allows this regulation to remain compatible with 10 CFR 20.2003.
22. 340.1210 "Reports of stolen, lost or missing sources of radiation" (Division 2)

**Rule Review:** [ Agreement State ] Part 20 equivalent compatibility requirements

340.1210 omits the requirement to identify a radiation machine's "maximum energy of radiation emitted" if that machine is lost or stolen. Radiation machines are beyond the scope of NRC regulations. This regulation meets the objective of 10 CFR 20.2201.

23. 340.1220 "Notification of incidents" (Division 1)

Consistent with the SSR, IDNS adds a requirement for incident reporting for a "total organ dose equivalent" in addition to the incidents reportable under 10 CFR 20.2202. Its meaning is the same as the reportable quantity specified in 10 CFR 20.2106(a)(6). 340.1220 meets the objective of the NRC regulation. (See NRC Regulatory Guide 8.7, Rev. 1, 1992).

24. 340.1230 "Reports of exposures, radiation levels and concentrations of radioactive material exceeding the limits" (Division 2)

IDNS, by law, cannot include requirements referenced in non-specific documents such as 40 CFR. If another document is referenced, it must be specifically identified with the applicable date. Referenced dates are modified in the IDNS regulations as significant changes are made to the Federal agency regulations. The regulations are essentially the same and are deemed compatible.

# REVIEW OF ILLINOIS PART 20 EQUIVALENT REGULATIONS

May 1997

## EXPLANATION OF ENTRIES UNDER "Compatible"

[Y] means the definition or rule is determined to be compatible with 10 CFR Part 20

[N] means the definition or rule is determined to be NOT compatible with 10 CFR Part 20

<u>Designation</u>	<u>Definition</u>	<u>NRC Section</u>	<u>State Section</u>	<u>Compatible</u>
A	Absorbed dose	20.1003	310.20	[Y]
A	Activity	20.1003	310.20	[Y]
A	Adult	20.1003	310.20	[Y]
A	Airborne radioactive material	20.1003	310.20	[Y]
A	Airborne radioactivity area	20.1003	310.20	[Y] 1
A	ALARA	20.1003	310.20	[Y]
A	Annual limit on intake (ALI)	20.1003	340.30	[Y]
A	Background radiation	20.1003	310.20	[Y] 2
A	Bioassay	20.1003	310.20	[Y]
A	Byproduct material	20.1003	310.20	[Y]
A	Class (lung class or inhalation class)	20.1003	340.30	[Y]
A	Collective dose	20.1003	310.20	[Y]
A	Committed dose equivalent	20.1003	310.20	[Y] #
A	Committed effective dose equivalent	20.1003	310.20	[Y] #
D	Controlled area	20.1003	Omitted	[Y] 3 @
A	Declared pregnant woman	20.1003	340.30	[N] 4

**Rule Review: Illinois Part 20 equivalent compatibility rules**

<u>Designation</u>	<u>Definition</u>	<u>NRC Section</u>	<u>State Section</u>	<u>Compatible</u>
A	Deep dose equivalent	20.1003	310.20	[Y] #
A	Derived air concentration (DAC)	20.1003	340.30	[Y]
A	Derived air concentration-hour (DAC-hour)	20.1003	340.30	[Y] +
D	Dose	20.1003	310.20	[Y]
A	Dose equivalent	20.1003	310.20	[Y] 5 #
A	Dose limits {limits}	20.1003	310.20	[Y]
D	Dosimetry processor	20.1003	340.30	[Y]
A	Effective dose equivalent	20.1003	310.20	[Y] #
A	Embryo/fetus	20.1003	310.20	[Y]
C	Entrance or access point	20.1003	310.20	[Y] +
A	Exposure	20.1003	310.20	[Y] 6
A	External dose	20.1003	310.20	[Y]
A	Extremity	20.1003	310.20	[Y]
A	Eye dose equivalent	20.1003	310.20	[Y]
A/D*	Generally applicable environmental radiation standards	↓ ↓ 20.1003	Omitted	[N] 7
*(A for states with authority to regulate uranium mill activity, D for states without authority)				
A	Gray	20.1004	310.20	[Y]
A	High radiation area	20.1003	310.20	[Y]
A	Individual	20.1003	310.20	[Y]
A	Individual monitoring	20.1003	310.20	[Y]
C	Individual monitoring devices	20.1003	310.20	[Y] 8
A	Internal dose	20.1003	310.20	[Y]
D	Licensed [or registered] material	20.1003	310.20	[Y] @+
B	Lost or missing licensed [or registered] source of radiation {material}	↓ ↓ 20.1003	310.20	[Y]
A	Member of the public	20.1003	310.20	[Y] 9
A	Minor	20.1003	310.20	[Y]
A	Monitoring	20.1003	310.20	[Y]
A	Nonstochastic effect	20.1003	340.30	[Y]
A	Occupational dose	20.1003	310.20	[Y] 10

**Rule Review: Illinois Part 20 equivalent compatibility rules**

<u>Designation</u>	<u>Definition</u>	<u>NRC Section</u>	<u>State Section</u>	<u>Compatible</u>
D	Planned special exposure	20.1003	340.30	[Y]
A	Public dose	20.1003	310.20	[Y]
A	Quality factor	20.1003	310.20	[Y]
D	Quarter	20.1003	Omitted	[Y] @
A	Rad	20.1004	310.20	[Y]
A	Radiation	20.1003	310.20	[Y]
A	Radiation area	20.1003	310.20	[Y]
A	Reference Man	20.1003	340.30	[Y]
A	Rem	20.1004	310.20	[Y]
C	Respiratory protective equipment {device}	20.1003	340.30	[Y]
A	Restricted area	20.1003	310.20	[Y]
A	Sanitary sewerage	20.1003	340.30	[Y] +
A	Shallow dose equivalent	20.1003	310.20	[Y] #
A	Sievert	20.1004	310.20	[Y]
D	Site boundary	20.1003	Omitted	[Y] @
A	Source material	20.1003	310.20	[Y]
A	Special nuclear material	20.1003	310.20	[Y]
A	Stochastic effect	20.1003	340.30	[Y]
A	Survey	20.1003	310.20	[Y]
A	Total effective dose equivalent (TEDE)	20.1003	310.20	[Y]
A	Unrestricted area	20.1003	310.20	[Y] 11
A	Very high radiation area	20.1003	340.30	[Y]
D	Week	20.1003	310.20	[Y]
A	Weighting factor $w_T$	20.1003	340.30	[Y] #
A	Whole body	20.1003	310.20	[Y]
A	Working level (WL)	20.1003	310.20	[Y]
A	Working level month (WLM)	20.1003	310.20	[Y]
A	Year	20.1003	310.20	[Y] 12

**Rule Review:** Illinois Part 20 equivalent compatibility rules

<u>Div</u>	<u>Designation</u>	<u>NRC rule</u>	<u>Rule subject</u>	<u>State Rule</u>	<u>Compatible</u>
1	A	20.1004	Units of radiation dose	310.140	[Y] #+
1	A	20.1005	Units of radioactivity	310.150	[Y]
2	D	20.1008(b - e)	Implementation, general	340.40	[Y] +
2	D	20.1101	Radiation protection programs	340.110	[Y] +
1	A	20.1201	Occupational dose limits for adults	340.210	[Y]
1	A	20.1202	Requirements for summation of external and internal doses	340.220	[Y] 13 #+
1	A	20.1203	Determination of external dose from airborne radioactive material	340.230	[Y] +
1	A	20.1204(except c)	Determination of internal exposure	340.240	[Y] 14+
2	A	20.1204©	Information on internal exposure	340.240	[Y]
1	D	20.1206	Planned special exposures	340.260	[Y] @+
1	A	20.1207	Occupational dose limits for minors	340.270	[Y]
1	A	20.1208	Dose to an embryo/fetus	340.280	[N] 15
1	A	20.1301(a, b)	Dose limits for individual members of the public	340.310	[Y] 16+
1	D	20.1302	Compliance with dose limits for individual members of the public	340.320	[Y] @+
2	D	20.1501(a, b)	Surveys and monitoring - general	340.510	[Y] @

**Rule Review:** Illinois Part 20 equivalent compatibility rules

<u>Div</u>	<u>Designation</u>	<u>NRC rule</u>	<u>Rule subject</u>	<u>State Rule</u>	<u>Compatible</u>
1	D	20.1501©	NVLAP requirement	340.510	[Y]
2	D	20.1502	Conditions requiring individual monitoring of external and internal occupational dose	340.520	[Y] +
1	D	20.1601(a - d)	Control of access to high radiation areas	340.610	[Y] 17 @+
2	D	20.1601(e)	Control not required for DOT package	340.610	[Y]
2	D	20.1601(f)	Control not required for hospital rooms and areas	340.610	[Y] +
1	D	20.1602	Control of access to very high radiation areas	340.620	[Y]
1	D	20.1701	Use of process or other engineering controls	340.710	[Y] +
1	D	20.1702	Use of other controls	340.720	[Y] +
1	D	20.1703	Use of individual respiratory protection equipment	340.730	[Y] +
2	D	20.1801	Security of stored sources of radiation	340.810	[Y] @+
2	D	20.1802	Control of material not in storage	340.810	[Y] @+
1	A	20.1901	Caution signs	340.910	[Y] 18
1	A	20.1902	Posting requirements	340.920	[Y] +
1	A	20.1904	Labeling containers	340.940	[Y] +
1	A	20.1905	Exceptions to labeling requirements	340.950	[Y] 19+
2	D	20.1906	Procedures for receiving and opening packages	340.960	[Y] @+

**Rule Review: Illinois Part 20 equivalent compatibility rules**

<u>Div</u>	<u>Designation</u>	<u>NRC rule</u>	<u>Rule subject</u>	<u>State Rule</u>	<u>Compatible</u>
2	C	20.2001	Waste disposal - general requirements	340.1010	[Y] 20+
2	D	20.2002	Method for obtaining approval of proposed disposal procedures	340.1020	[Y] +
2	A - (a)(2) & (3) C - (a) (4) D - (a)(1) & (b)	20.2003	Disposal by release into sanitary sewerage	340.1030	[Y] 21+
2	B	20.2006	Transfer for disposal and manifests	340.1060	[Y]
1	D (C if state adopts "planned special exposure")	20.2104(except f)	Determination of prior occupational dose	340.250	[Y] @+
2	C	20.2201(except c)	Reports of Stolen, Lost, or Missing Licensed or Registered Sources of Radiation	340.1210	[Y] 22
1	C	20.2202(except e)	Notification of Incidents	340.1220	[Y] 23
2	C - (a), (b) D - (d) NRC - ©	20.2203	Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Limits	340.1230M	24+
2	D	20.2204	Reports of Planned Special Exposures	340.1240	[Y] +
1	C	20 Appendix A	Protection Factors for Respirators	340.25	[Y]
1	A	20 Appendix B	ALI's and DAC's; effluent concentrations; concentrations for release to sewerage	340.25	[Y]
1	A	20 Appendix C	Quantities of licensed material requiring labeling	340.25	[Y]

**Rule Review:** Illinois Part 20 equivalent compatibility rules

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2	B	20 Appendix F	LLW transfer for disposal and manifests	340.25	[Y]

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<u>Designation</u>	<u>Definition</u>	<u>NRC Section</u>	<u>State Section</u>	<u>Compatible</u>
--	Becquerel	20.1005	310.20	[Y]
--	Curie	20.1005	310.20	[Y]
--	U.S. Department of Energy {Department}	20.1003	310.20	[Y]

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340.1210 omits the requirement to identify a radiation machine's "maximum energy of radiation emitted" if that machine is lost or stolen. Radiation machines are beyond the scope of NRC regulations. This regulation meets the objective of 10 CFR 20.2201.

23. 340.1220 "Notification of incidents" (Division 1)  
Consistent with the SSR, IDNS adds a requirement for incident reporting for a "total organ dose equivalent" in addition to the incidents reportable under 10 CFR 20.2202. Its meaning is the same as the reportable quantity specified in 10 CFR 20.2106(a)(6). 340.1220 meets the objective of the NRC regulation. (See NRC Regulatory Guide 8.7, Rev. 1, 1992).
24. 340.1230 "Reports of exposures, radiation levels and concentrations of radioactive material exceeding the limits" (Division 2)  
IDNS, by law, cannot include requirements referenced in non-specific documents such as 40 CFR. If another document is referenced, it must be specifically identified with the applicable date. Referenced dates are modified in the IDNS regulations as significant changes are made to the Federal agency regulations. The regulations are essentially the same and are deemed compatible.