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JUL 29 1977

Docket No. 50-331

Iowa Electric Light & Power Company
 ATTN: Mr. Duane Arnold
 President
 P. O. Box 351
 Cedar Rapids, Iowa 52406

Gentlemen:

RE: DUANE ARNOLD ENERGY CENTER

On November 29, 1976, the Commission published in the Federal Register, (copy enclosed) an amended Section 20.103 of 10 CFR 20, which became effective on December 29, 1976. One effect of this revision is that in order to receive credit for limiting the inhalation of airborne radioactive material, respiratory protective equipment must be used as stipulated in Regulatory Guide 8.15. Another requirement of the amended regulation is that licensees authorized to make allowance for use of respiratory protective equipment prior to December 29, 1976, must bring the use of their respiratory protective equipment into conformance with Regulatory Guide 8.15 by December 29, 1977.

Because the respiratory protective program described in Section 6.9.1-1 through 6.9.1-3 of your facility Technical Specifications differs from that stipulated in Regulatory Guide 8.15, the effect of this change in the regulations is to require amendment of your Technical Specifications. In view of the provisions of Section 6.9.1 of your Technical Specifications, which require conformance with 10 CFR 20, the fact that Section 20.103 no longer requires specific authorization to employ respiratory protective equipment, and the revocation provisions of subsection 6.9.1-3, we conclude that the necessary amendment to your facility's Technical Specifications can be effected by merely deleting Section 6.9.1-1 through 6.9.1-3.

Accordingly, this is to advise you that pursuant to 10 CFR 20.103(c) and (f), if you desire to receive credit for use of respiratory protective equipment at your facility after December 28, 1977, such use must be as stipulated in Regulatory Guide 8.15 rather than as specified in your

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current Technical Specifications. Based on the revocation provision of your current specification on respiratory protection and in the absence of prior written objection from you, we will include deletion of this specification in an amendment of your Technical Specifications approved after December 28, 1977. No response to this letter is required.

Sincerely,

J. Nowicki for

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosure:
Federal Register Notice,
November 29, 1976, amending
10 CFR 20.103, 20.104
and 20.405

cc w/enclosure:
Robert Lowenstein, Esquire
Harold F. Reis, Esquire
Lowenstein, Newman, Reis and Axelrad
1025 Connecticut Avenue, N. W.
Washington, D. C. 20036

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426 Third Avenue, S. E.
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DATE	7/29/77	7/29/77	7/29/77	7/29/77		

of a related manual of respiratory protection against radioactive materials was also announced in the notice of proposed rule making.

Interested persons were invited to submit written comments or suggestions for consideration in connection with the proposed amendments by October 7, 1974, and the comment period was extended, upon request, to November 6, 1974. In addition, copies of the draft guide and manual were provided in response to requests.

Licensing and related regulatory functions of the AEC were transferred to the NRC pursuant to section 201 of the Energy Reorganization Act of 1974.

After consideration of the comments received and other considerations, the Nuclear Regulatory Commission has adopted the proposed amendments to Part 20 published for comment, with certain clarifying modifications and editorial changes. The more important changes, based largely on the comments received, are summarized as follows:

Since the limits on exposure to airborne radioactive materials are now expressed in terms of intake of such materials into the body, it was suggested that reference be made in the regulation (§ 20.103(a)(1)) to some standardized bases for estimating intake. Accordingly, the effective rule includes a reference to an NRC Regulatory Guide on acceptable concepts, models, equations and assumptions for a bioassay program (Regulatory Guide 8.9).

The intake limits for certain mixtures of uranium in soluble form (§ 20.103(a)(2)) have been changed to conform with those adopted by the Atomic Energy Commission on July 29, 1974 (39 FR 23990).

Licensees may, under the amended regulation, ordinarily control exposures to radioactive materials in much the same way as they do under the regulation before amendment. For example, if from measured concentrations of radioactive materials in air, and from generally known work patterns and stay-times in airborne radioactivity areas, it can be ascertained that no exposure of an individual in excess of the quarterly limit could occur, individual estimates of intake of radioactive material would not be required. In those circumstances where the licensee finds it necessary to maintain individualized records of intake estimates, a requirement to record very small assessments of intake could result in burdensome and unnecessary recordkeeping. To avoid such a requirement the effective regulation has been clarified so that assessment of individual intakes less than specified amounts need not be included in such records (§ 20.103(a)(3)). Licensees might, of course, maintain notes of individual entry into airborne radioactivity areas through "work permit" or similar means, for purposes such as checking effectiveness of respiratory protection programs without estimating intakes and maintaining

Title 10—Energy

CHAPTER I—NUCLEAR REGULATORY COMMISSION

PART 20—STANDARDS FOR PROTECTION AGAINST RADIATION

Exposure of Individuals to Concentrations of Radioactive Materials in Air in Restricted Areas

On August 21, 1974, (39 FR 30164) the Atomic Energy Commission published in the FEDERAL REGISTER proposed amendments to 10 CFR Part 20 concerning control of internal occupational exposures to radioactive materials including provision for use of respiratory protective equipment. The availability of drafts of a related regulatory guide on acceptable programs for respiratory protection and

individual intake records unless they were needed.

Some commenters were concerned that Regulatory Guide 8.15, which is referenced in the amended § 20.103(c), might be changed without sufficient notice to licensees. Changes to the guide would result in a redating or renumbering of the guide with appropriate changes to § 20.103(c) including prior public notice and procedures thereof in the FEDERAL REGISTER. In addition, a draft of Regulatory Guide 8.15 and its associated manual were noticed with publication of the proposed rule and made available for comment even before adoption of the present procedures.

While no reference is made in the new rule to allowance for particle size in determining exposures to airborne radioactivity, licensees may continue to apply for an exception for such allowance under the provisions of § 20.501.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and sections 552 and 553 of the United States Code, the following amendment to Title 10, Chapter I, Code of Federal Regulations, Part 20, is published as a document subject to codification.

1. Section 20.103 is amended to read as follows:

§ 20.103 Exposure of individuals to concentrations of radioactive materials in air in restricted areas.

(a)(1) No licensee shall possess, use, or transfer licensed material in such a manner as to permit any individual in a restricted area to inhale a quantity of radioactive material in any period of one calendar quarter greater than the quantity which would result from inhalation for 40 hours per week for 13 weeks at uniform concentrations of radioactive material in air specified in Appendix B, Table I, Column 1.¹ If the radioactive material is of such form that intake by absorption through the skin is likely, individual exposures to radioactive material shall be controlled so that the uptake of radioactive material by any organ from either inhalation or absorption or both routes of intake² in any calendar quarter does not exceed that which would result from inhaling such radio-

active material for 40 hours per week for 13 weeks at uniform concentrations specified in Appendix B, Table I, Column 1.

(2) No licensee shall possess, use, or transfer mixtures of U-234, U-235, and U-238 in soluble form in such a manner as to permit any individual in a restricted area to inhale a quantity of such material in excess of the intake limits specified in Appendix B, Table I, Column 1 of this part. If such soluble uranium is of a form such that absorption through the skin is likely, individual exposures to such material shall be controlled so that the uptake of such material by any organ from either inhalation or absorption or both routes of intake³ does not exceed that which would result from inhaling such material at the limits specified in Appendix B, Table I, Column 1 and footnote 4 thereto.

(3) For purposes of determining compliance with the requirements of this section the licensee shall use suitable measurements of concentrations of radioactive materials in air for detecting and evaluating airborne radioactivity in restricted areas and in addition, as appropriate, shall use measurements of radioactivity in the body, measurements of radioactivity excreted from the body, or any combination of such measurements as may be necessary for timely detection and assessment of individual intakes of radioactivity by exposed individuals. It is assumed that an individual inhales radioactive material at the airborne concentration in which he is present unless he uses respiratory protective equipment pursuant to paragraph (c) of this section. When assessment of a particular individual's intake of radioactive material is necessary, intakes less than those which would result from inhalation for 2 hours in any one day or for 10 hours in any one week at uniform concentrations specified in Appendix B, Table I, Column 1 need not be included in such assessment, provided that for any assessment in excess of these amounts the entire amount is included.

(b)(1) The licensee shall, as a precautionary procedure, use process or other engineering controls, to the extent practicable, to limit concentrations of radioactive materials in air to levels below those which delimit an airborne radioactivity area as defined in § 20.203(d)(1)(ii).

¹ Significant intake by ingestion or injection is presumed to occur only as a result of circumstances such as accident, inadvertence, poor procedure, or similar special conditions. Such intakes must be evaluated and accounted for by techniques and procedures as may be appropriate to the circumstances of the occurrence. Exposures so evaluated shall be included in determining whether the limitation on individual exposures in § 20.103(a)(1) has been exceeded.

² Regulatory guidance on assessment of individual intakes of radioactive material is given in Regulatory Guide 8.9, "Acceptable Concepts, Models, Equations and Assumptions for a Bioassay Program," single copies of which are available from the Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, upon written request.

(2) When it is impracticable to apply process or other engineering controls to limit concentrations of radioactive material in air below those defined in § 20.203(d)(1)(ii), other precautionary procedures, such as increased surveillance, limitation of working times, or provision of respiratory protective equipment, shall be used to maintain intake of radioactive material by any individual within any period of seven consecutive days as far below that intake of radioactive material which would result from inhalation of such material for 40 hours at the uniform concentrations specified in Appendix B, Table I, Column 1 as is reasonably achievable. Whenever the intake of radioactive material by any individual exceeds this 40-hour control measure, the licensee shall make such evaluations and take such actions as are necessary to assure against recurrence. The licensee shall maintain records of such occurrences, evaluations, and actions taken in a clear and readily identifiable form suitable for summary review and evaluation.

(c) When respiratory protective equipment is used to limit the inhalation of airborne radioactive material pursuant to paragraph (b)(2) of this section, the licensee may make allowance for such use in estimating exposures of individuals to such materials provided that such equipment is used as stipulated in Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection."

(d) Notwithstanding the provisions of paragraphs (b) and (c) of this section, the Commission may impose further restrictions:

(1) On the extent to which a licensee may make allowance for use of respirators in lieu of provision of process, containment, ventilation, or other engineering controls, if application of such controls is found to be practicable; and

(2) As might be necessary to assure that the respiratory protective program of the licensee is adequate in limiting exposures of personnel to airborne radioactive materials.

(e) The licensee shall notify, in writing, the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix D at least 30 days before the date that respiratory protective equipment is first used under the provisions of this section.

(f) A licensee who was authorized to make allowance for use of respiratory protective equipment prior to December 29, 1976 shall bring his respiratory protective program into conformance with the requirements of paragraph (c) of this section within one year of that date, and is exempt from

³ This incorporation by reference provision was approved by the Director of the Federal Register on October 19, 1976. Single copies of Regulatory Guide 8.15 are available from the Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, upon written request.

¹ Since the concentration specified for tritium oxide vapor assumes equal intakes by skin absorption and inhalation, the total intake permitted is twice that which would result from inhalation alone at the concentration specified for H 3 S in Appendix B, Table I, Column 1 for 40 hours per week for 13 weeks.

² For radioactive materials designated "Sub" in the "Isotope" Column of the table, the concentration value specified is based upon exposure to the material as an external radiation source. Individual exposures to these materials may be accounted for as part of the limitation on individual dose in § 20.101. These materials shall be subject to the precautionary procedures required by § 20.103(b)(1).

³ Multiple the concentration values specified in Appendix B, Table I, column 1 by 6.3×10^4 ml to obtain the quarterly quantity limit.

the requirement of paragraph (e) of this section.

2. In § 20.104, paragraph (c) is revised to read as follows:

§ 20.104 Exposure of minors.

(c) The provisions of §§ 20.103(b)(2) and 20.103(c) shall apply to exposures subject to paragraph (b) of this section except that the references in §§ 20.103(b)(2) and 20.103(c) to Appendix B, Table I, Column 1 shall be deemed to be references to Appendix B, Table II, Column 1.

(3) In § 20.405, paragraph (a) is revised to read as follows:

§ 20.405 Reports of overexposures and excessive levels and concentrations.

(a) In addition to any notification required by § 20.403, each licensee shall make a report in writing within 30 days to the Director, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555,

with a copy to the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix D, of (1) each exposure of an individual to radiation in excess of the applicable limits in §§ 20.101 or 20.104 (a) or the license; (2) each exposure of an individual to radioactive material in excess of the applicable limits in §§ 20.103(a)(1), 20.103(a)(2), 20.104(b) or the license; (3) levels of radiation or concentrations of radioactive material in a restricted area in excess of any other applicable limit in the license; (4) any incident for which notification is required by § 20.403; and (5) levels of radiation or concentrations of radioactive material (whether or not involving excessive exposure of any individual) in an unrestricted area in excess of ten times any applicable limit set forth in this part or in the license. Each report required under this paragraph shall describe the extent of exposure of persons to radiation or to radioactive material, including estimates of each individual's

exposure as required by paragraph (b) of this section; levels of radiation and concentrations of radioactive material involved; the cause of the exposure, levels or concentrations; and corrective steps taken or planned to assure against a recurrence.

Effective date. These amendments become effective on December 29, 1976.

(Secs. 53, 63, 81, 103, 104, 161 b and c, Pub. L. 83-703, 88-489, 91-560, 68 Stat. 930, 933, 935, 937, 948-949, 70 Stat. 1069, 78 Stat. 602, 84 Stat. 1472, 88 Stat. 475 (42 U.S.C. 2073, 2093, 2111, 2133, 2134, 2201); Sec. 201, Pub. L. 93-438, 88 Stat. 1242 (42 U.S.C. 5841)).

Dated at Washington, D.C. this 23rd day of November 1976.

For the Nuclear Regulatory Commission.

SAMUEL J. CHILK,
Secretary of the Commission.

[FR Doc. 76-35131 Filed 11-26-76; 8:45 am]