

MAH : 15/71

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Docket No. 50-298

Honorable Carl T. Curtis
United States Senate

Dear Senator Curtis:

Thank you for your letter of January 4, 1971, requesting a report on the concern expressed by Mrs. Jeff Broady of Brownville, Nebraska, about the Cooper Nuclear Station. I am sending a similar reply to Senator Roman L. Hruska.

I am enclosing a report which discusses the questions presented by Mrs. Broady. For your information, I have also enclosed a copy of a letter Mrs. Broady addressed to the President, and the response by Dr. Peter A. Morris, Director, Division of Reactor Licensing, dated January 14, 1970.

In answer to Mrs. Broady's specific question, we expect that operation of the Cooper Nuclear Station may increase radiation exposures of persons living in the immediate vicinity by about 5 millirems per year. This estimate is based on information provided by the Nebraska Public Power District, AEC evaluation of the plant site, and the operating experience of similar power plants during the past several years. A comparison of this amount of radiation to amounts received from other sources is discussed in the enclosed report, as well as AEC's programs to limit and control radiation exposures. Briefly, the AEC limits on releases of radioactivity from a nuclear power plant are designed to assure that exposure to the public will be well within the guides and standards established for the protection of the public health and safety.

If we can be of any further assistance to you or to Mrs. Broady, please let me know.

Cordially,

Chairman

Enclosures:

1. Staff Report w/attachments
2. Ltr fm Mrs. Broady to the President, 11/20/69
3. Ltr fm Dr. Morris to

CRESS OFFICE ▶	Mrs. Broady, 1/14/70			OGC	DR	OCR
T150, RO1	FClemenson:blv	PAMorris	LRogers		HLPrice	
SURNAME ▶						
DATE ▶	3/1/71	3/ /71	3/ /71	3/ /71	3/ /71	3/ /71

STAFF REPORT PREPARED BY THE
DIVISION OF RADIOLOGICAL AND ENVIRONMENTAL PROTECTION

An AEC construction permit for the Cooper Nuclear Station near Brownville, Nebraska, was issued to the Nebraska Public Power District on June 4, 1968. A description of the AEC's procedures for reviewing applications for nuclear power plant construction permits and operating licenses, as well as the AEC's continuing surveillance over operating plants, is described in the enclosed booklet, "Licensing of Power Reactors."

The enclosed statement by Mr. Lester Rogers, Director of AEC's Division of Radiological and Environmental Protection, before the Wisconsin Department of Natural Resources, discusses the sources of radioactivity in effluents from nuclear power plants, the development of radiation protection standards, AEC's regulations for the control of levels of radioactivity from these nuclear power plants, including measures to keep releases of radioactivity to the environment as low as practicable, and operating experience with such plants to date.

We would call Mrs. Broady's attention especially to Attachment II to Mr. Rogers' statement which compares the levels of exposure to radiation from various sources. In addition, Mrs. Broady may be interested in some measurements of natural outdoor radiation levels which illustrate how one's exposure may be changed by 3 to 100 millirems simply by moving from one location to another in the midwest:

<u>Location</u>	<u>Outdoor Radiation Level (millirems per year) *</u>
Sioux City, Iowa	85
Kingsley, Iowa	89
Cherokee, Iowa	82
Rockwell City, Iowa	77
Fort Dodge, Iowa	74
Greeley, Colorado	107
Fort Morgan, Colorado	127
Denver, Colorado	170

In addition to outdoor levels of radiation, the presence of potassium and other naturally occurring radioactive materials in the diet will contribute from 20 to 25 millirems per year to the radiation exposures of persons at all locations. By comparison, it is expected that radioactivity from Cooper Nuclear Station would contribute much less than one millirem per year to radiation exposures of persons whose diets consisted of dairy products and other foods produced in the immediate vicinity.

A preoperational environmental radiation monitoring program will be completed prior to start of operation of the Cooper Nuclear Station. The data obtained will establish a reference base line against which subsequent operational environmental radiation monitoring data can be evaluated. During plant operation, a continuing monitoring program will be carried out to assure the adequacy and applicability of the

* Measurements made by the National Center for Radiological Health, U.S. Public Health Service.

data. The monitoring programs will include air samples taken on the plant site and at several selected offsite stations. River water samples will be taken at several locations along the Missouri River, and river bottom sediments will be sampled above and below the river intake and outlet plumes. Well water samples will be collected from wells at the plant site and at selected offsite locations. Soil samples will be collected from the plant site and offsite locations within a radius of approximately five miles. Samples of food crops and other suitable vegetation will be collected at the same locations as the soil samples. In addition, milk samples will be obtained from selected commercial dairy farms within a radius of five miles from the plant site and fish specimens of commercial species and size will be collected from the Missouri River.

In the preliminary design and safety analysis report submitted by the applicant with the application for a construction permit, the applicant stated that the gaseous radioactive waste system will be designed with the objective that the radiation doses to offsite persons resulting from routine plant operation do not average more than 1% of the limits specified in the Commission's regulations. Such doses could only be approached at the site boundary and would diminish rapidly with distance from the site. Even doses at this level would only be a few percent of the radiation received by everyone from natural background radiation.

Also enclosed for Mrs. Broady's information is a print of Part 1 of hearings before the Joint Committee on Atomic Energy on "Environmental Effects of Producing Electric Power." We would call Mrs. Broady's attention especially to the testimony by the late Commissioner Theos J. Thompson (pages 175-194), Commissioner Clarence E. Larson (pages 238-276), and Dr. Paul C. Tompkins, Executive Director, Federal Radiation Council (pages 391-415).