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SEP 12 1969

Honorable Joseph E. Karth
House of Representatives

Dear Mr. Karth:

I am pleased to enclose for your information a copy of a letter from Mr. Harold L. Price, the AEC's Director of Regulation, to Mr. Paul H. Engstrom, President of the Minnesota Environmental Control Citizen's Association, forwarding answers to a list of questions prepared by Mr. Steve J. Gadler of the Minnesota Pollution Control Agency.

These answers were prepared in response to your letter to me of July 22, about which you made a further inquiry dated September 3, 1969. As Mr. Price noted in his letter, it had been felt that answers to two previous lists of questions submitted by the Minnesota Pollution Control Agency, and furnished to Mr. Engstrom by letter of June 17, 1969, answered the main thrust of Mr. Gadler's third list, submitted in somewhat different form.

If I can be of further assistance in this matter, please let me know.

Cordially,

(Signed) Glenn T. Seaborg

Chairman

Enclosure:

Mr. Price's ltr to
Mr. Engstrom w/answers
to Question List #3

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SURNAME ▶	WGDooly:jdw				HLPrice <i>(initials)</i>	
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SEP 12 1969

Mr. Paul H. Engstrom, President
 Minnesota Environmental Control Citizens
 Association
 1053 South McKnight Road
 Saint Paul, Minnesota 55119

Dear Mr. Engstrom:

This is in further response to your letter of May 24, 1969, addressed to Chairman Glenn T. Seaborg of the Atomic Energy Commission, with which you enclosed a series of questions titled "List #3" by Mr. Steve J. Gadler of the Minnesota Pollution Control Agency.

My letter to you of June 17, 1969, enclosed copies of correspondence with the Minnesota Pollution Control Agency answering two earlier lists of questions from Mr. Gadler which we felt also answered the main thrust of his third list, submitted in somewhat different form.

I am enclosing our specific answers to the questions contained in Mr. Gadler's List #3.

Sincerely,

/s/ C. L. Henderson for

Harold L. Price
 Director of Regulation

Enclosure:
 Answers to Question List #3

cc: Representative Joseph E. Karth

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SURNAME ▶	WGDooly:jd	PAM	ERPrice	CLH	HLPrice	
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AEC ANSWERS TO QUESTIONS PREPARED BY STEVE J. GADLER

REGARDING THE MONTICELLO NUCLEAR GENERATING PLANT

(Question List #3 Dated April 30, 1969)

QUESTION

1. Since the health and safety of the Minneapolis-St. Paul metropolitan population down river and down wind from the Monticello Nuclear Reactor plant is of concern, why did the AEC -
 - a. Approve the request to build and operate a reactor which according to the NSP Final Safety and Analysis Report has undeveloped components?
 - b. License the construction and operation of an experimental type of reactor under the Research and Development section of the Atomic Energy Act?
 1. Is the Monticello site or plant licensed? Or are both licensed?
 - c. Permit the discharge of radioactive pollutants into the Mississippi which is the source of drinking water for approximately one third of the people living in Minnesota and for the down river populations to the Gulf of Mexico and a source of water for industry and for agricultural irrigation?
 - d. Fail to make any plans to provide a source of water supply for down river users in the event of a nuclear accident at Monticello which would destroy the river as a source of drinking water?
 - e. Not advise the USPHS that the Mississippi River water was used for irrigation down river from the Monticello plant?
 - f. Overlook producing complete and thorough studies on the total effect to the Mississippi River Valley ecological system from the contemplated radioactive waste discharges into the air and water environments from Monticello, Elk River, Prairie Island and other reactors?
 - g. Neglect to consider the damage to the quality of the water and to the river biota from the thermal pollutants to be discharged from Monticello, Elk River, Prairie Island and other being planned for this area?

ANSWER TO QUESTION #1

The Congress has established and the Atomic Energy Commission administers a system of licensing and regulation which considers the radiological health and safety aspects of each proposed nuclear power reactor, including the design of the reactor and its engineered safety features, the suitability of the site, the quality of construction and fabrication of reactor components vital to safety, and the operating organization and manner of operation. There are two principal stages in this licensing and regulation process: (1) the construction permit stage, at which the AEC determines there is reasonable assurance that a reactor of the design and power proposed can be operated safely at the selected site, and (2) the operating license stage, at which assurance is obtained that the reactor has been constructed in conformance with the permit, and the facility is tested for safety purposes and brought to full power.

The Monticello plant proposed by the Northern States Power Company (NSP) has successfully passed through the first stage of this licensing process in which a finding was made that there was reasonable assurance that the reactor could be constructed and operated at the selected site without endangering the health and safety of the public. The construction permit authorizes NSP to build the plant at the specific site, and the company has applied for a license authorizing operation of the plant at this location.

In connection with its application for an operating license, which was submitted more than a year in advance of the expected fuel loading date, NPS submitted a Final Safety Analysis Report (FSAR). During the AEC review period

any safety items remaining to be resolved, including areas specified as research and development at the construction permit stage, must be completed and documented by amendments to the FSAR. No operating license will be issued until all plant components and research and development programs having a bearing on safety are completed, and the regulatory staff is satisfied that operation can be conducted without undue risk to the health and safety of the public.

All licenses for nuclear power plants built to date have been issued under Section 104 b. of the Atomic Energy Act of 1954, as amended, which authorizes the licensing of nuclear facilities involved in the conduct of research and development activities leading to the demonstration of the practical value of such facilities for industrial or commercial purposes. The Act provides that whenever the Commission makes a finding that any type of reactor has been sufficiently developed to be of practical value within the meaning of Section 102 of the Act, the Commission may thereafter issue "commercial" licenses for such type of reactor under Section 103 of the Act. This economic question has no bearing on the safety of the Monticello plant, which is not considered to be an "experimental type of reactor."

The limits in AEC regulations on low levels of radioactive materials that may be released in effluents from nuclear facilities are based principally on the radiation protection guides developed by the Federal Radiation Council (FRC) and approved by the President for the guidance of all federal agencies. The FRC uses the best expertise in the field, and takes into

account the recommendations of the National Council on Radiation Protection and Measurements (NCRP) and the International Commission on Radiological Protection (ICRP).

The AEC limits on concentrations of radioactivity permitted in any nuclear power reactor liquid effluents leaving a restricted area, prior to dilution in a stream or other body of water, are such that a member of the public could use the effluent as a source of drinking water throughout his lifetime without exceeding the FRC radiation protection guide for an individual in the population from this source of exposure. Monitoring programs at nuclear power plants now operating show that radioactivity in liquid effluents is generally less than one percent of limits imposed by AEC regulations. Concentrations of radioactivity that might be released in the effluents, of course, are further reduced by dilution in the body of water into which they are discharged. With respect to the use of water with such low concentrations of radioactivity for other activities, such as irrigation and industrial processes, the maximum exposure of the public that could result from such uses would be well within FRC radiation protection guides for the public. Copies of all applications to build and operate nuclear power plants, as well as the AEC's safety evaluations, are sent to the U. S. Public Health Service for its information and review.

Emergency plans and procedures to cope with unlikely substantial radioactive releases offsite, including notification of appropriate public officials, must be developed and completed by NSP prior to the start of Monticello plant operations. These plans, to be included in the FSAR, will

be reviewed for adequacy by the AEC staff and the Advisory Committee on Reactor Safeguards before a license is granted, and will become a part of the public record. The existence of adequate detailed procedures for implementation of the emergency plans will be ascertained by the Division of Compliance.

The AEC for more than 20 years has funded research programs on biological and environmental effects of radioactivity, and presently has budgeted nearly 10 million dollars toward environmental research for 1969. Extensive studies have been conducted over the years of the Columbia River in the vicinity of the Commission's Hanford facilities, and of the Clinch River in the vicinity of the Oak Ridge facilities in Tennessee. None of these studies has shown any harmful effects on the environment. Environmental monitoring programs also have been and are being carried out in the vicinity of nuclear power plants. The quantities of radioactivity released from nuclear power reactors are so small that it has been difficult to measure any increases in radioactivity above the natural background levels that could be attributed to effluents from the nearby nuclear reactors. Based on experience thus far, no reason has been found to believe that routine discharges of radioactive materials from power reactors built, under construction or planned, will damage the environment; nonetheless, the AEC, in view of the large increases projected in the number of power reactors, is continuing to conduct and to support research in this area.

The AEC presently lacks authority to impose restrictions regarding the thermal effects of discharges from licensed nuclear facilities.

Licensing by the AEC, however, does not relieve the applicant from being subject to the appropriate jurisdictions in other areas which would also be involved if the plant were fueled by coal, oil, or other nonnuclear means. Each state, of course, has the same authority to deal with thermal effects from nuclear power plants as it does from fossil-fueled power plants unless in some way restricted by state law. In this connection, the AEC keeps interested state and local officials informed of applications received and licensing actions taken on the proposed nuclear projects, and cooperates with federal agencies regarding nonradiological factors associated with nuclear power plants that fall within their jurisdiction.

We have been informed by the Northern States Power Company that it intends to conform to water quality standards as related to thermal effects which have been adopted by the Minnesota Pollution Control Agency, with respect to both the Monticello plant and the Prairie Island Nuclear Generating Plant. We also have been informed that the company expects to cooperate closely with the U.S. Fish and Wildlife Service and the Minnesota Department of Conservation regarding any thermal effects on the ecology from the projected operation of these plants. NSP states that a comprehensive ecological and radiological monitoring program has been in operation for a year in the vicinity of the Monticello site, and that a similar program is being formulated for the Prairie Island environment.

QUESTION

2. Since the public health is of concern what control will be imposed on the operator by AEC -

- a. In event the plant is closed down because of accident or obsolescence?
- b. For disposition of site, radioactive structure and reactor after final close down?
- c. To prevent abandonment in order to protect the public interest?
- d. To decontaminate and control area as long as necessary to protect the public health and safety?

ANSWER TO QUESTION #2

The AEC determines that an applicant for a nuclear power reactor operating license possesses or has reasonable assurance of obtaining the funds necessary to cover the estimated costs of permanently shutting the facility down and maintaining it in a safe condition. A licensee may not abandon a nuclear plant without authorization by the AEC. Procedures for decontamination, disposal of facilities and protection of the public health and safety in connection with the termination of licenses are provided for in Chapter 10 CFR Section 50.82 of the AEC's regulations as follows:

"Section 50.82 Application for Termination of Licenses

"(a) Any licensee may apply to the Commission for authority to surrender a license voluntarily and to dismantle the facility and dispose of its component parts. The Commission may require information, including information as to proposed procedures for the disposal of radioactive material, decontamination of the site, and other procedures, to provide reasonable assurance that the dismantling of the facility and disposal of the component parts will be performed in accordance with the regulations in this chapter and will not be inimical to the common defense and security or to the health and safety of the public.

"(b) If the application demonstrates that the dismantling of the facility and disposal of the component parts will be performed in accordance with the regulations in this chapter and will not be inimical to the common defense and security or to the health and safety of the public, and after notice to interested persons, the Commission may issue an order authorizing such dismantling and disposal, and providing for the termination of the license upon completion of such procedures in accordance with any conditions specified in the order."

QUESTION

3. The AEC literature indicates that many reactors such as Fermi, Pathfinder, Piqua, Bonus, Hallum, Elk River, etc., have been closed and others such as Dresden, Peach Bottom, Oyster Creek, etc., have experienced difficulties due to many factors such as equipment failures, deterioration of metal, which has resulted in unscheduled radioactive waste releases to the environment. It therefore appears that the reactors are still in various stages of research and development and that all the necessary experimental work has not been accomplished and in view of these salient facts affecting the health and safety of all Americans, why did AEC not -
 - a. Conduct and complete all research and development work to develop a reactor technology before -
 1. Imposing experimental nuclear plants on the economy?
 2. Exposing American citizens to the risks of ionizing radiation from the radioactive waste discharged to the environment from these reactors?
 - b. Disseminate complete information to the public concerning -
 1. The present health and future risks to the population from the exposure to the radioactive wastes discharged into the environment?
 2. Accidents and accidental discharges of radioactive wastes from reactors?
 3. Total amount of radioactive wastes being discharged to environment, to be discharged, and the probable effects to health?
 - c. Close down reactors discharging radioactive wastes above AEC limits rather than to permit operations when reactors were experiencing difficulties?

- d. Develop positive and secure instrumentation and monitoring methods to insure complete and effective data concerning amounts of radioactive wastes discharged to the environment?
- e. Withdraw all operational licenses under the research and development section of the Atomic Energy Act?
- f. Provide complete plans for establishing -
 - 1. Alert warning networks?
 - 2. Adequate medical facilities and evacuation procedures in the event of a nuclear accident?

ANSWER TO QUESTION #3

The preface to this group of questions, several of which have been answered in previous correspondence with the Minnesota Pollution Control Agency, implies that the difficulties or malfunctions experienced by the reactors mentioned here were indicative of serious risk to public health and safety. This was not the case. While some of these reactors were early prototype reactors built and operated primarily to prove out the very extensive research and development which had gone into their design and construction, all of them had undergone thorough reviews by independent groups to assure that any credible malfunctions could not result in serious releases of radioactivity to the environment. It would be unrealistic to assume that it is practical, before operation, to bring any complex process or equipment to a stage at which no malfunctions or failures can be expected to occur and at which one does not expect to effect further improvement based on actual operational experience.

The Commission has no information on releases of radioactive materials from nuclear power reactors and associated risks to public health which is

not available to the public. The entire process of safety review and licensing of nuclear power reactors is carried out openly and publicly. AEC regulations require licensees to report to the Commission any significant radiation incident that may occur in licensed operations, which is investigated. These reports are placed in the Commission's Public Document Room for public inspection. Nuclear power plant licensees also file periodic operating reports which are made available in the Public Document Room.

Contrary to the implication in this question, no nuclear power plant licensed by the Commission has exceeded applicable annual limits on releases of radioactive materials to the environment. Also, the Commission has not found it necessary to withdraw any operating license for a nuclear power plant for health and safety reasons, since the safety record of these plants has been excellent.

The instrumentation and monitoring methods used by operators of nuclear power reactors are determined to be more than adequate for the purposes of demonstrating that releases of radioactive materials to the environment meet all AEC requirements. In fact, they adequately demonstrate that releases are far too small to justify the detailed measurements on individual radionuclides that would be required to obtain complete data on amounts of radioactive materials released to the environment or to estimate actual exposures of people to such materials. For example, operators of a considerable number of reactors determine that the gross concentrations of radioactive materials, other than tritium, in effluent water is less than 1×10^{-9} microcuries per milliliter. There is no radionuclide produced in a power reactor for which the recommended maximum concentration for human exposure is less than

1×10^{-7} microcuries per milliliter. Consequently, if the total concentration is less than 1×10^{-9} microcuries per milliliter, we are assured that it is less than 1% of applicable limits. Depending upon the average dilution of the effluent in surface waters, resulting exposures of members of the public may be expected to be still smaller fractions of applicable limits. The very considerable effort that would be required to perform the radiochemical analyses on each batch of radioactive material released to the environment under such conditions could serve no useful purpose.

As indicated in our answer to Question #1, Northern States Power Co., as is required of all nuclear power plant license applicants, must develop plans for coping with emergencies before an operating license can be issued. These plans are reviewed for adequacy, including provision for establishing and maintaining contact with local and state authorities, and with hospital officials who might be called upon in the event of an accident at the facility that could have consequences offsite. Since the authority to order evacuation of the local area or to impose other protective measures resides with the local authorities and not with the applicant, we determine that a plan exists in which the applicant notifies, assists and advises such groups regarding the extent of any accident which might affect the public and the desirability of initiating protective action such as evacuation. NSP has also made provisions for treatment at local hospitals of injured and/or radioactively contaminated individuals.

In addition to our pre-licensing evaluation of an applicant's plans for coping with emergencies, AEC inspectors verify the adequacy of the detailed procedures for implementation of the emergency plan, as part of the Commission's inspection program extending over the lifetime of the facility.

In the event of an accident, a licensee is required to notify the AEC immediately, and to initiate emergency procedures. Emergency radiological assistance is made available under the AEC's Radiological Assistance Program which maintains regional coordinating offices throughout the country. Under this plan, if requested, the AEC would coordinate available expert assistance from federal and state agencies. As a part of the Commission's continuing activities to assure capability of the medical profession to treat radiation injuries, the AEC also sponsors periodic training seminars on a regional basis for physicians affiliated with nuclear plants or with local hospitals that have agreed to assist in the event of a radiation accident.

QUESTION

4. The Sacramento Municipal Utility District plant is designed by Westinghouse to eliminate the discharge of any radioactivity to the water environment. Mr. Seaborg, Chairman of the AEC in a speech to an Air Pollution Symposium in Washington, D.C., in 1967 said that the AEC is capable of designing plants without smoke stacks. In view of the SMUD system and the Seaborg statement -
 - a. How much time will be necessary to develop a reactor plant that can contain all radioactive wastes?
 - b. What are these costs per megawatt of electric power produced?
 - c. What is the amount of radioactive wastes produced per megawatt of electric power in a BWR type plant of the Monticello size?

ANSWER TO QUESTION #4

The Sacramento Municipal Utility District's Rancho Seco Nuclear Generating Station differs from most nuclear plants in that a large supply of water such as a river or lake is not conveniently available. The nuclear steam supply system will be provided by Babcock and Wilcox, and the waste disposal system will be designed by Bechtel Associates. The main difference between the proposed SMUD reactor and other pressurized water power reactor designs is that liquid effluents will not be discharged in a local body of water at the site. A special, more elaborate radioactive waste treatment system is provided which includes additional stages of ion exchange demineralizers and additional tanks for liquid storage. The processed liquids are stored for reuse and concentrated radioactive wastes are converted to solid waste material, sealed in drums, and transported offsite by a licensed waste disposal contractor.

The complete containment of gaseous radioactive wastes, if it is ever possible, will require technological advances to develop equipment for removing and permanently holding the radioactive noble gases which are inert, chemically inactive gases. No estimate of the cost of developing such a system is available.

The remarks by Chairman Seaborg concerning the capability of designing stackless nuclear reactor plants were intended to indicate that the amounts of gaseous radioactivity releases from these facilities are so small that some of them are built without stacks; e.g., pressurized water reactor plants. These facilities do, however, still release some gaseous radioactivity.

Regarding the amount of radioactive wastes produced in a plant of the Monticello type, we believe the question was intended to relate to the amount of radioactivity in wastes released from the plant. Virtually all of the fission products produced during operation remain confined in the fuel elements until ultimately removed at a processing plant and stored. The following data are based on the radioactive wastes released from from operating boiling water reactors designed by the General Electric Company, which would be indicative of the order of magnitude of releases to be expected from the Monticello nuclear facility. During 1967 and 1968, the total radioactivity of liquid wastes released by boiling water reactors ranged from approximately 3 to 65 microcuries per electrical megawatt hour. The gaseous releases ranged between about 0.3 and 3 curies per electrical megawatt hour.

QUESTION

5. The literature indicates that the AEC has permitted all nuclear reactors to discharge tritium substantially above the level permitted for other radioactive wastes, why does AEC -
 - a. Permit tritium discharges to the environment?
 - b. Only utilize estimates instead of accurate on-line measurements for tritium discharges from reactors?
 - c. Why has USPHS recently established a tritium monitoring network?

ANSWER TO QUESTION #5

Tritium is a radioactive form of hydrogen. Some tritium produced during reactor operation is released to the environment in routine air and water discharges. Tritium gas is oxidized over a period of time to form

water molecules. Water containing tritium acts chemically like ordinary water; most of it passes through the human body rapidly. This rapid turnover, together with the relatively low energy of the radiation emitted, makes tritium relatively less hazardous for a given level of radioactivity in the water than most other radioactive materials. While AEC regulations set concentration limits for tritium releases from nuclear facilities that are higher than for other radioisotopes, these concentrations, under present and expected conditions in the operation of power reactors, could not exceed a small fraction (less than 1%) of levels considered acceptable for human use by national and international advisory bodies (ICRP, NCRP and FRC).

It is difficult to measure tritium in low concentrations. Since measurement accuracy increases with higher levels, the amounts of tritium released to the environment from presently operating nuclear power plants generally are conservatively estimated on the basis of measurements in the plant where tritium levels are highest. This location is in the primary coolant system where most of the tritium is generated. It is generally conservatively assumed that the total volume of liquid wastes released have the same concentration of tritium as that measured in the primary coolant, in estimating the amount of tritium released to the environment. This is an extremely conservative estimate, since (1) the bulk of the volume of liquid wastes is from sources other than the primary coolant; (2) the tritium is in the form of water in the liquid radwaste system, hence would react like water with no potential means for reconcentrating it anywhere within the reactor system; and (3) the highest tritium levels would be expected in the primary coolant.

The Bureau of Radiological Health, Consumer Protection and Environmental Health Service, Department of Health, Education and Welfare, gathers data on levels of several radionuclides, including tritium, as part of its overall program to maintain surveillance on radioactivity levels in the environment and to evaluate exposures to the public. The agency began monitoring tritium levels in surface waters in the United States in 1964, started gathering data on tritium levels in milk and food in 1965, and in 1967 began gathering data on tritium levels in precipitation. Summaries of the data are published from time to time in Radiological Health Data and Reports, a monthly publication of the U.S. Public Health Service.

QUESTION

6. According to information released by AEC, it appears hold up tanks will be utilized at the Monticello plant to meet the requirements of the limitations imposed by 10 CFR 20. In event of an inversion which should preclude discharge of radioactive wastes to the atmosphere -
- a. What action can be taken by plant operators if tanks are already full when inversion occurs and more radioactive gaseous wastes must be handled?
 - b. Will plant be closed down under these conditions?
 - c. Are tanks at Monticello of sufficient capacity to hold up all gaseous radioactive wastes under adverse conditions to protect the public health and safety?
 - d. What will be done with wastes produced during shut down if tanks are full?

ANSWER TO QUESTION #6

Under the provisions of 10 CFR Part 20 of the AEC regulations the effluents from a reactor facility must be controlled and limited to such values that the cumulative whole body radiation exposure to an individual at the theoretical point of highest exposure would not exceed the limit

recommended by FRC and adopted by the AEC. Irrespective of weather conditions or gaseous effluent holdup time, an operator of a nuclear power plant is not permitted to exceed release rates which are conservatively calculated and specified as mandatory conditions of the license to implement this principle.

Continuous radiation monitoring of the off-gas system provides the means to demonstrate compliance with the stack release rate limits. Radiation monitors are located before and after the holdup system. If radiation levels in excess of the allowable instantaneous release rate were detected, an alarm would be actuated, followed by isolation of the off-gas system from the stack. Thus, the high activity radioactive gas would be confined in the holdup system, and would not be released to the stack until it could be ensured that the stack release rate limits would not be exceeded. If corrective measures to reduce the activity level could not be made within the time delay period of the holdup system, then under the conditions of the license the plant would need to be shut down.

If the plant had to be shut down, the radioactive fission products would be contained within the facility's primary system or primary containment. Additional details on this subject are contained in the attached letter of August 18, 1969, to Mr. Gadler from Dr. Peter A. Morris, Director of AEC's Division of Reactor Licensing.

QUESTION

7. According to AEC if excessively high radiation levels are detected during periods when radioactive gases are held up from discharge to

environment or if unfavorable weather conditions prevail, release to the atmosphere will probably not be able to meet conditions of 10 CFR 20.

- a. In such an event does AEC advocate violation of its own regulations?
- b. What are the possible courses of action and recommendations to avoid the discharges under the conditions set forth in item 7 above?

ANSWER TO QUESTION #7

As stated in the answer to question 6, the applicant will not be allowed to operate in non-compliance with the provisions of 10 CFR Part 20. In the event that the instantaneous gaseous effluent limit is exceeded, the applicant may reduce the reactor power level to as low as is necessary to avoid exceeding these limits. If need be, the applicant would be required to shut down the facility for an extended period of time.

QUESTION

8. The Advisory Committee on Reactor Safeguards of the Atomic Energy Commission by a letter to Chairman Seaborg dated April 13, 1967, recommended -
 - a. Stress analysis report for the reactor vessel be reviewed by independent experts since this is the first Nuclear plant to use a field welded and erected pressure vessel, a procedure new to the industry.
 - b. That the AEC Regulatory staff satisfy itself with respect to the adequacy of the isolation valve test program and follow the development of the detailed design since in the event of a steam line rupture external to the reactor containment the steam line isolation valves must close rapidly.
 - c. That NSP provide supplementary facilities for retention of radioactive wastes during periods of low river flow since during periods when cooling tower are utilized for recirculation of condenser cooling water the volume of discharge water into which the radioactive wastes can be diluted will be greatly reduced.

In view of the importance of the above items to the health and safety of the public, detailed information should be presented to the Agency on the status and results of the ACRS Committee's recommendations?

ANSWER TO QUESTION #8

In accordance with the suggestion of the ACRS, the reactor pressure vessel stress analysis report is being reviewed by independent experts.

A contract has been let to Teledyne Materials Research Division of the Teledyne Company to perform this study. The Teledyne report will be submitted to the AEC regulatory staff.

With respect to the status of the isolation valve test program, valve closure tests have been completed, and a report of these tests has been submitted to the regulatory staff. Similar valves have been accepted by the AEC for use in the Oyster Creek and Nine Mile Point facilities. The staff and ACRS review of the steam line isolation valves for the Monticello facility will be completed before an operating license is issued.

The applicant will be required to comply with the provisions of 10 CFR Part 20 in the discharge canal prior to discharge into the Mississippi River. Since the volume of condenser cooling water in the discharge canal will be greater during high river flow (open-cycle operation) than during low river flow (closed-cycle cooling tower operation), the permissible amount of radioactivity released during closed-cycle operation will be less than during periods of open-cycle operation. The radwaste system had been designed and sized so that the facility will be capable of operating during periods of any of the proposed modes of cooling tower operation. During periods of extremely low river water flow, the liquid radioactive wastes could be continuously recycled through the liquid cleanup system until the radwaste levels were such that release to the discharge canal

was possible in compliance with the provisions of 10 CFR Part 20. Northern States Power has stated that it expects releases to the river to be lower than the amount allowed under the provisions of 10 CFR Part 20, even under the most adverse conditions.

The description of actions taken in response to these ACRS recommendations, and the results of the AEC staff and ACRS reviews of the matters will be placed on the public record and made available in the Commission's Public Document Room.

QUESTION

9. The Monticello Unit #1 design incorporated at least 12 features (itemized on page 16 of Partial Summary of the Facility Description and Safety Analysis Report) which have not yet been demonstrated in reactor plant operation. All of these items were reviewed by the AEC Staff and the Advisory Committee on Reactor Safeguards, however since these important safety features which concern health and safety were only reviewed and not approved detailed information must be presented to the Agency showing -
 - a. Where and when the listed items were found approvable and capable of meeting all safety requirements to protect the health and safety of the public?
 - b. Recommendations as to the possibility of safe operation of these items which are new features and have not previously been operated in BWR reactors, without undue risk to health and safety of the public?
 - c. Of the 12 listed items, which items have been completely developed and approved for use at Monticello by the AEC staff and the Advisory Committee on Reactor Safeguards? When and by whom approved?
 - d. Of remaining items needing approval how many require additional research and development?
 - e. What is estimated approval date?
 - f. What are recommendations on operating the plant without AEC approval of all the tested and necessary engineering (sic) safeguards?

ANSWER TO QUESTION #9

The twelve design features referred to on page 16 of the "Partial Summary of the Facility Description and Analysis Report," which was presented by the applicant at the public hearing on the Monticello facility, were, as indicated in the question, reviewed by our staff and the Advisory Committee on Reactor Safeguards. These reviews, which were performed before a construction permit was issued for the facility, determined that adequate research development programs had been proposed to resolve any safety questions associated with these features. Before the plant can be granted a provisional operating license by the Commission, each of these features will be reviewed in detail either during the review of the Monticello facility or during the reviews of other, similar, units which are performed prior to the completion of the Monticello review.

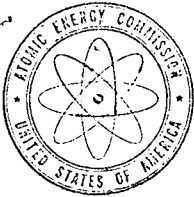
With reference to the twelve features common with other facilities, the applicant stated, on page 16 of the "Partial Summary," that "the operability of each of the common features will have been demonstrated in full scale reactor plant operation prior to operation of Monticello Unit 1." This is also our expectation.

These features, as well as all other aspects of the plant, must be capable of meeting all safety requirements to protect the health and safety of the public.

Several of these features, such as the Control Rod Worth Minimizer, the Control Rod Velocity Limiter, the Control Rod Drive Housing Support, the Main Steam Line Flow Restricters, the Core Spray Systems, the Containment Atmosphere Control Systems, and the In-Core Neutron Monitoring System have

been considered by the staff and the ACRS in conjunction with the Oyster Creek and Nine Mile Point reviews, and were found acceptable for inclusion in these units. Operation of the Monticello unit will not be authorized until a final review of any remaining items has been performed by the staff and the ACRS. All of the features are under current review with respect to their adequacy for use in the Monticello facility. The results of final reviews of the staff and the ACRS will be placed on the public record and made available in the Commission's Public Document Room. When published, copies of these reports can be obtained by writing to the Director, Division of Reactor Licensing.

The anticipated fuel loading date for the facility is in early 1970, but we emphasize the operation of the plant will not be allowed without a Commission finding that the plant, including necessary engineered safety features, can be operated without undue risk to the health and safety of the public.



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

AUG 18 1969

Mr. Steve J. Gadler
2120 Carter Avenue
St. Paul, Minnesota 55108

Dear Mr. Gadler:

I am pleased to respond to your letter of June 30 addressed to Mr. Howard Shapar, Assistant General Counsel of the Atomic Energy Commission.

You expressed a concern that the conditions of 10 CFR 20 related to gaseous effluent release at the Monticello Nuclear Power Plant probably would not be able to be met if high activity during the holdup period, or unfavorable weather conditions prevailed. In this regard, the following discussion may help to clarify what appears to be a misunderstanding of the provisions of 10 CFR 20.

Under the provisions of 10 CFR 20 the effluent from a reactor facility is to be controlled and limited to such values that the cumulative whole body radiation dose to an individual at the theoretical point of highest exposure will not exceed the limit recommended by FRC and adopted by the AEC. Irrespective of weather conditions or gaseous effluent holdup time, an operator of a nuclear power plant is not permitted to exceed release rates conservatively calculated and specified as mandatory conditions of his license included to implement this principle.

To translate these requirements into plant operating conditions for each reactor plant, specific limits on rates of radioactive material (curies per second) which may be released from the stack are derived. An annual average release rate limit is established such that the concentration of radioactive gas released under monitored and controlled conditions, when averaged over the calendar year, will not result in exposure at any offsite location above the specified limit. To account for variations in plant operating characteristics and weather conditions, releases at rates above the average rate are permitted over short periods of time. Limits are also placed, however, on the levels to which these short term release rates may go. If release rates above the average are temporarily experienced, there must be corresponding periods during which release rates are below the average, so that the average release rate permitted for the year is not exceeded.

In developing the permissible annual average and maximum short-term release rate limits in any given case, the meteorological characteristics of the site (including inversions and other adverse conditions), the topography of the site environs, and the gaseous holdup time available in the plant off-gas system are considered. The limits so derived become the specified operating conditions within which the plant must operate.

Continuous radiation monitoring of the off-gas system provides the means to demonstrate compliance with the stack release rate limits. Radiation monitors are located before and after the holdup system. If radiation levels in excess of the allowable instantaneous release rate were detected an alarm would be actuated followed by isolation of the off-gas system from the stack. Thus, the high activity radioactive gas would be confined in the holdup system and would not be released to the stack until it could be ensured that the stack release rate limits would not be exceeded. If corrective measures to reduce the activity level could not be made within the time delay period of the holdup system, then under the conditions of the license the plant would need to be shut down.

Sincerely,

Peter A. Morris, Director
Division of Reactor Licensing

CONTROL NUMBER

ACTION COMPLETION DEADLINE

DATE OF DOCUMENT

9/3/69

FILE LOCATION

TO

Chairman Seaberg

ACTION PROCESSING DATES

Acknowledged _____

Interim Report _____

Final _____

INFORMATIONAL COPY DISTRIBUTION

_____ Chairman	_____ ADNS	_____ COM
_____ GM	_____ ADA	_____ SS
_____ Dep. Dir.	_____ OGC	_____ SLR
_____ A. D.	_____ RL	_____ ML

DESCRIPTION

Ltr

☐ Original☒ Copy☐ Other

re Steve Godler's questions on the Monticello plant -
inquiry re reply to letter of July 21, 1969

REMARKS **MM-3272, 2197**

Reply for Chairman's signature
"Dear Mr. Kerth"

NOTE: ACTION IN RESPONSE
12/ 0.5.

CM 3603

REFERRED TO

DATE

Henderson f/action 9/10/69

Gys: KPrice	Sluper
ack	PMR (30-163)
Mann	Valeria
Morris	
Western	
KPrice	

Is notification to the JCAE
recommended? _____

FROM REP. JOSEPH L. KATZ (MINNESOTA)		DATE OF DOCUMENT 9/5/69		DATE RECEIVED 9/6/69		CONTROL NUMBER 8603	
TO SEADORG		SUSPENSE DATE 9/12		FILE CODE			
		CLASSIFICATION Series: U Copy _____ of _____		REPLY DATES Acknowledge _____ Interim _____ Final _____		SPECIAL INSTRUCTIONS <input type="checkbox"/> Appropriate Handling <input type="checkbox"/>	
DESCRIPTION: LTR. <input type="checkbox"/> Original <input type="checkbox"/> Copy <input type="checkbox"/> Other XEROX CY. REQUESTING A REPLY TO THE ORIGINAL REQUEST OF 5/24/69 RE QUESTIONS ASKED THE AEC BY STEVE GADLER, A MEMBER OF THE MINNESOTA POLLUTION CONTROL AGENCY CONCERNING ENVIRON- MENTAL EFFECTS OF NUCLEAR POWER PLANTS.				PREPARE FOR SIGNATURE OF: <input checked="" type="checkbox"/> CHAIRMAN <input type="checkbox"/> DIV./OFFICE DIRECTOR <input type="checkbox"/> GENERAL MANAGER <input type="checkbox"/> <input type="checkbox"/> ASST. GENERAL MANAGER			
ENCLOSURES XEROX CY OF LTR. FR. SEADORG TO REP. KATZ DTD 7/28/69				REMARKS: NOTE: ACKN. IN RESPONSE 10/ 0.5.			
REFERRED TO		DATE		RECEIVED BY		DATE	
EEC.		9/9					
INFORMATION COPIES SENT TO:				<input type="checkbox"/> CHAIRMAN <input type="checkbox"/> GENERAL MANAGER <input checked="" type="checkbox"/> SEC. H ST. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			

GENERAL MANAGER'S COMMUNICATIONS CONTROL
U. S. ATOMIC ENERGY COMMISSION

FORM HQ-284
(4-68)

DR-2328

OFFICE OF THE CHAIRMAN

TO:

Com Reg.

For appropriate handling.

Com

Reply for Chairman's signature

For information: GM _____ Commissioners _____ DR ☒

Remarks _____

Julius H. Rubin
For the Chairman

JOSEPH E. KARTH
5TH DISTRICT, MINNESOTA

2432 RAYBURN HOUSE OFFICE BUILDING
CAPITOL 5-6631

ROBERT E. HESS
ADMINISTRATIVE ASSISTANT

Congress of the United States
House of Representatives
Washington, D.C. 20515

September 3, 1969

11
COMMITTEE ON
SCIENCE AND ASTRONAUTICS
CHAIRMAN, SUBCOMMITTEE ON
SPACE SCIENCE AND
APPLICATIONS
SUBCOMMITTEE ON
NASA OVERSIGHT

COMMITTEE ON
MERCHANT MARINE AND
FISHERIES
SUBCOMMITTEE ON
FISHERIES AND WILDLIFE
CONSERVATION
SUBCOMMITTEE ON
OCEANOGRAPHY
SUBCOMMITTEE ON
PANAMA CANAL

Dr. Glenn T. Seaborg, Chairman
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Dr. Seaborg:

On July 22, 1969 I wrote to you regarding questions which were asked the Atomic Energy Commission by one Steve Gadler, a member of the Minnesota Pollution Control Agency.

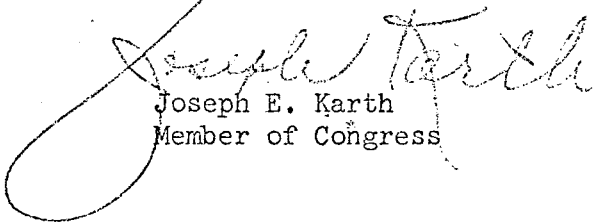
On July 28 you responded (copy enclosed) indicating that such answers to Mr. Gadler's questions would be formulated by the Commission's staff.

It seems to me that the A.E.C. has had ample time to reply to Mr. Gadler's questions which date back to May 24 when the original request was made of your agency by Rev. Paul Engstrom.

I hope we can hear from you soon.

With best wishes and regards, I am

Very truly yours,


Joseph E. Karth
Member of Congress

JEK:js
enclosure
cc: Steve Gadler

Rec'd Off. Dir. of Reg.
Date 9/9/69
Time 11:30

DR-2328

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

July 28, 1969

OFFICE OF THE CHAIRMAN

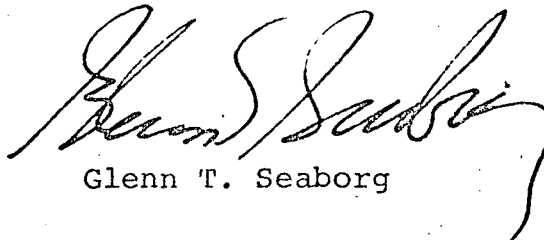
Honorable Joseph E. Karth
House of Representatives

Dear Mr. Karth:

I am deeply perturbed about the situation that has developed in Minnesota concerning environmental effects of nuclear power plants, and I wish to assure you that the Atomic Energy Commission has made every effort to be responsive to questions raised by the citizens of your State.

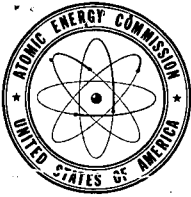
In specific response to your letter of July 22, I have asked the AEC staff to prepare replies to the questions posed by Mr. Gadler and forwarded to you by Mr. Engstrom. A copy of the reply will be forwarded to you when it is completed.

Sincerely,

A handwritten signature in dark ink, appearing to read "Glenn T. Seaborg", with a large, sweeping flourish extending from the bottom right.

Glenn T. Seaborg

(1) CLH
(2) Dooley



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

July 28, 1969

Honorable Joseph M. Ertz
House of Representatives

Dear Mr. Ertz:

I am deeply perturbed about the situation that has developed in Minnesota concerning environmental effects of nuclear power plants, and I wish to assure you that the Atomic Energy Commission has made every effort to be responsive to questions raised by the citizens of your State.

In specific response to your letter of July 22, I have asked the AEC staff to prepare replies to the questions posed by Mr. Gdler and forwarded to you by Mr. Engstrom. A copy of the reply will be forwarded to you when it is completed.

Sincerely,

(Signed) Glenn T. Seaborg

Glenn T. Seaborg

bcc:
Chairman Seaborg
Commissioner Ramey
Commissioner Johnson
Commissioner Thompson
Commissioner
General Manager
Dir. of Regulation
✓ C. Henderson

JLB/kbf

		CONT. NO. NUMBER 2472	ACTION COMPLETION DEADLINE
		DATE OF DOCUMENT 7/21/69	FILE LOCATION
TO Sanberg		ACTION PROCESSING DATES Acknowledged _____ Interim Report _____ Final _____	INFORMATIONAL COPY DISTRIBUTION ____ Chairman ____ ADNS ____ COM ____ GM ____ ADA ____ SS ____ Dep. Dir. ____ OGC ____ SLR ____ A. D. ____ RL ____ ML
DESCRIPTION Ltr <input type="checkbox"/> Original <input checked="" type="checkbox"/> Copy <input type="checkbox"/> Other		REMARKS Ref: HQ-2197 Prepare reply for the Chairman's signature.	
<p>Encl. letter from Paul Engstrom, HEOCA, asking Rep. Keith to obtain answers in AMS to Steve Sadler's questions (List #3) on the Monticello plant</p>			
REFERRED TO	DATE		
Memorandum 1/section	7/24/69		
Cys: MPrice	Morris		
Deck	Western		
Shaper	FNR (SO-243)		
		<p>In notification to the JCAE recommended? _____</p>	

OFFICE OF THE CHAIRMAN

reh

7-23

(Date)

DR-2272

TO:

DR

For appropriate handling

DR

Reply for Chairman's signature

For information:

GM P. C. Brown

Commissioners



DR

Remarks

Julius H. Rubin
For the Chairman

JOSEPH E. KARTH
4TH DISTRICT, MINNESOTA

2432 RAYBURN HOUSE OFFICE BUILDING
CAPITOL 5-6931

ROBERT E. HESS
ADMINISTRATIVE ASSISTANT

Congress of the United States

House of Representatives

Washington, D.C. 20515

July 22, 1969

COMMITTEE ON
SCIENCE AND ASTRONAUTICS
CHAIRMAN, SUBCOMMITTEE ON
SPACE SCIENCE AND
APPLICATIONS
SUBCOMMITTEE ON
NASA OVERSIGHT

COMMITTEE ON
MERCHANT MARINE AND
FISHERIES

SUBCOMMITTEE ON
FISHERIES AND WILDLIFE
CONSERVATION

SUBCOMMITTEE ON
OCEANOGRAPHY

SUBCOMMITTEE ON
PANAMA CANAL

Dr. Glenn T. Seaborg, Chairman
Atomic Energy Commission
Washington, D. C. 20545

Dear Dr. Seaborg:

Enclosed is a copy of a letter from one of my constituents who happens to be President of the Minnesota Environmental Control Citizens Council.

While his letter is self-explanatory, I do hope you can provide answers to Mr. Gadler's questions. I strongly feel that two months is sufficient time for the Atomic Energy Commission to formulize its reply.

Mr. Gadler was recently reappointed to the Minnesota Pollution Control Agency thus he has public status.

I would, of course, appreciate anything you can do to satisfy his queries.

With best wishes, I am

Very truly yours,


Joseph W. Karth
Member of Congress

JEK:js
Enclosure

DR - 2272

JUL 22 1969

MECCA

MINNESOTA ENVIRONMENTAL CONTROL CITIZENS ASSOCIATION

XXXXXXXXXXXXXXXXXXXX
1043 South Michigan Road, Saint Paul, Minnesota 55119
Central Manor, 26 E. Exchange St. 55101

July 18, 1969

Congressman Joseph Karth
CONGRESS OF THE UNITED STATES
House of Representatives
Washington, D.C. 20515

Dear Congressman Karth:

On May 24 th I wrote to Chairman Glen T. Seaborg of the United States Atomic Energy Commission submitting questions prepared by Mr. Steve Gadler of the Minnesota Pollution Control Agency. The questions concern the safety and operation of nuclear power plants and in particular the nuclear plant at Monticello which is now under construction. I am also enclosing a copy of the letter from AEC dated June 17 th in lieu of providing answers to these important questions concerning the safety of our people and the integrity of our drinking water.

MECCA will appreciate your assistance in securing answers from the AEC to Mr. Gadler's questions. A copy of these questions is enclosed.

We recommend that when the AEC or any other governmental agency receives direct questions from American citizens that it should be the policy of these agencies to furnish direct and relevant answers. They should certainly not furnish them reams of reference material without also providing understandable answers.

Thank you for your help in this matter.

Sincerely yours,



Paul H. Engstrom, President

Minnesota Environmental Control Citizens Assoc.

PHE:dsg
Encl.

Monticello Nuclear Generating Plant Questions Pertaining to the AEC
(List #3)

by

Steve J. Gadler, P.E.
Member of the Minnesota Pollution Control Agency

1. Since the health and safety of the Minneapolis-St. Paul metropolitan population down river and down wind from the Monticello Nuclear Reactor plant is of concern, why did the AEC -
 - a. Approve the request to build and operate a reactor which according to the MSP Final Safety and Analysis Report has undeveloped components?
 - b. License the construction and operation of an experimental type of reactor under the Research and Development section of the Atomic Energy Act?
 1. Is the Monticello site or plant licensed? Or are both licensed?
 - c. Permit the discharge of radioactive pollutants into the Mississippi which is the source of drinking water for approximately one third of the people living in Minnesota and for the down river populations to the gulf of Mexico and a source of water for industry and for agricultural irrigation?
 - d. Fail to make any plans to provide a source of water supply for down river users in the event of a nuclear accident at Monticello which would destroy the river as a source of drinking water?
 - e. Not advise the USPHS that the Mississippi River water was used for irrigation down river from the Monticello plant?
 - f. Overlook producing complete and thorough studies on the total effect to the Mississippi River Valley ecological system from the contemplated radioactive waste discharges into the air and water environments from Monticello, Elk River, Prairie Island and other reactors?
 - g. Neglect to consider the damage to the quality of the water and to the river biota from the thermal pollutants to be discharged from Monticello, Elk River, Prairie Island and other being planned for this area?
2. Since the public health is of concern what control will be imposed on the operator by AEC -
 - a. In event the plant is closed down because of accident or obsolescence?

Monticello Nuclear Generating Plant Questions Pertaining to the AEC

- b. For disposition of site, radioactive structure and reactor after final close down?
- c. To prevent abandonment in order to protect the public interest?
- d. To decontaminate and control area as long as necessary to protect the public health and safety?

3. The AEC literature indicates that many reactors such as Fermi, Pathfinder, Piqua, Bonus, Hallum, Elk River, etc., have been closed and others such as Dresden, Peach Bottom, Oyster Creek, etc., have experienced difficulties due to many factors such as equipment failures, deterioration of metal, which has resulted in unscheduled radioactive waste releases to the environment. It therefore appears that the reactors are still in various stages of research and development and that all the necessary experimental work has not been accomplished and in view of these salient facts affecting the health and safety of all Americans, why did AEC not -

a. Conduct and complete all research and development work to develop a reactor technology before -

- 1. Imposing experimental nuclear plants on the economy?
- 2. Exposing American citizens to the risks of ionizing radiation from the radioactive waste discharged to the environment from these reactors?

b. Disseminate complete information to the public concerning -

- 1. The present health and future risks to the population from exposure to the radioactive wastes discharged into the environment?
- 2. Accidents and accidental discharges of radioactive wastes from reactors?
- 3. Total amount of radioactive wastes being discharged to environment, to be discharged, and the probable effects to health?

- c. Close down reactors discharging radioactive wastes above AEC limits rather than to permit operations when reactors were experiencing difficulties?
- d. Develop positive and secure instrumentation and monitoring methods to insure complete and effective data concerning amounts of radioactive wastes discharged to the environment?
- e. Withdraw all operational licenses under the research and development section of the Atomic Energy Act?

Monticello Nuclear Generating Plant Questions Pertaining to the AEC

f. Provide complete plans for establishing -

1. Alert warning networks?

2. Adequate medical facilities and evacuation procedures in the event of a nuclear accident?

4. The Sacramento Municipal Utility District plant is designed by Westinghouse to eliminate the discharge of any radioactivity to the water environment. Mr. Seaborg, Chairman of the AEC in a speech to an Air Pollution Symposium in Washington D. C. in 1967 said that the AEC is capable of designing plants without smoke stacks. In view of the SMUD system and the Seaborg statement -

a. How much time will be necessary to develop a reactor plant that can contain all radioactive wastes?

b. What are these costs per megawatt of electric power produced?

c. What is the amount of radioactive wastes produced per megawatt of electric power in a BWR type plant of the Monticello size?

5. The literature indicates that the AEC has permitted all nuclear reactors to discharge tritium substantially above level permitted for other radioactive wastes, why does AEC -

a. Permit tritium discharges to the environment?

b. Only utilize estimates instead of accurate on-line measurements for tritium discharges from reactors?

c. Why has USPHS recently established a tritium monitoring network?

6. According to information released by AEC, it appears hold up tanks will be utilized at the Monticello plant to meet the requirements of the limitations imposed by 10 CFR 20. In event of an inversion which should preclude discharge of radioactive wastes to the atmosphere -

a. What action can be taken by plant operators if tanks are already full when inversion occurs and more radioactive gaseous wastes must be handled?

b. Will plant be closed down under these conditions?

Handwritten: c. Are tanks at Monticello of sufficient capacity to hold up all gaseous radioactive wastes under adverse conditions to protect the public health and safety?

Handwritten: d. What will be done with wastes produced during shut down if tanks are full?

Monticello Nuclear Generating Plant Questions Pertaining to the AEC

7. According to AEC if excessively high radiation levels are detected during periods when radioactive gases are held up from discharge to environment or if unfavorable weather conditions prevail, release to the atmosphere will probably not be able to meet conditions of 10 CFR 20.
 - a. In such an event does AEC advocate violation of its own regulations?
 - b. What are the possible courses of action and recommendations to avoid the discharges under the conditions set forth in item 7 above?
8. The Advisory Committee on Reactor Safeguards of the Atomic Energy Commission by letter to Chairman Seaborg dated April 13, 1967 recommended -
 - a. Stress analysis report for the reactor vessel be reviewed by independent experts since this is the first Nuclear plant to use a field welded and erected pressure vessel, a procedure new to the industry.
 - b. That the AEC Regulatory staff satisfy itself with respect to the adequacy of the isolation valve test program and follow the development of the detailed design since in the event of a steam line rupture external to the reactor containment the steam line isolation valves must close rapidly.
 - c. That NSP provide supplementary facilities for retention of radioactive wastes during periods of low river flow since during periods when cooling tower are utilized for recirculation of condenser cooling water the volume of discharge water into which the radioactive wastes can be diluted will be greatly reduced.

In view of the importance of the above items to the health and safety of the public, detailed information should be presented to the Agency on the status and results of the ACRS Committee's recommendations?

9. The Monticello Unit #1 design incorporated at least 12 features (itemized on page 16 of Partial Summary of the Facility Description and Safety Analysis Report) which have not yet been demonstrated in reactor plant operation. All of these items were reviewed by the AEC Staff and the Advisory Committee for Reactor Safeguards, however since these important safety features which concern health and safety were only reviewed and not approved detailed information must be presented to the Agency showing -
 - a. Where and when the listed items were found approvable and capable of meeting all safety requirements to protect the health and safety of the public?
 - b. Recommendations as to the possibility of safe operation of these items which are new features and have not previously been operated in BWR reactors, without undue risk to health and safety of the public?

April 30, 1969
(List #3)

Monticello Nuclear Generating Plant Questions Pertaining to the AEC

- c. Of the 12 listed items, which items have been completely developed and approved for use at Monticello by the AEC Staff and the Advisory Committee on Reactor Safeguards? When and by whom approved?
- d. Of remaining items needing approval how many require additional research and development?
- e. What is estimated approval date?
- f. What are recommendations on operating the plant without AEC approval of all the tested and necessary engineering safeguards?



UNITED STATES
ATOMIC ENERGY COMMISSION

WASHINGTON, D.C. 20545

JUN 17 1969

Mr. Paul H. Engstrom, President
Minnesota Environmental Control
Citizens Association
1053 South McKnight Road
St. Paul, Minnesota 55119

Dear Mr. Engstrom:

I am pleased to respond to your letter of May 24, 1969, addressed to Chairman Glenn T. Seaborg of the Atomic Energy Commission, submitting a series of questions by Mr. Steve J. Gadler, a member of the Minnesota Pollution Control Agency.

In a letter to me dated September 3, 1968, Mr. John P. Badalich, Executive Director of the Minnesota Pollution Control Agency, submitted certain comments and a list of 83 questions by Mr. Gadler. On November 19, 1968, a response to this letter with enclosures was sent to Mr. Badalich. A copy of this letter and its enclosures is enclosed for your information.

On December 20, 1968, the Executive Director of the Minnesota Pollution Control Agency addressed another letter to me submitting another series of 27 further questions by Mr. Gadler. Copies of the response to this letter, dated February 17, 1969, and its enclosure (Congressional Joint Committee on Atomic Energy Hearings on Licensing and Regulation of Nuclear Reactors held in April and May 1967) are also enclosed.

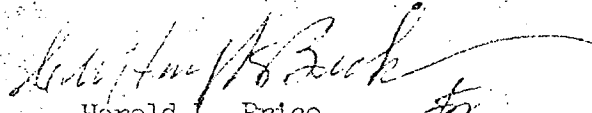
We trust that the enclosures which represent a comprehensive response to questions posed by Mr. Gadler in two earlier series are adequately responsive to the series submitted with your letter in somewhat different form. Copies of the two letters from the Executive Director of the

Mr. Paul H. Engstrom

- 2 -

Minnesota Pollution Control Agency above referred to and the inquiries of Mr. Gadler thereto attached are enclosed so that their character and the references in the respective responses may be identified.

Sincerely,



Harold L. Price
Director of Regulation

Enclosures:

1. Ltr fm Mr. Badalich dtd 9/3/68
w/enclosures
2. Ltr to Mr. Badalich dtd 11/19/68
w/enclosures
3. Ltr fm Mr. Badalich dtd 12/20/68
w/enclosure
4. Ltr to Mr. Badalich dtd 2/17/69
w/enclosures