

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

John F. Wolf, Chairman  
Dr. Robert L. Holton  
Glenn O. Bright



In the Matter of )

COMMONWEALTH EDISON COMPANY, ET AL. )

(Carroll County Site) )

Docket Nos. S50-5:1  
S50-60:

October 10, 1979

MEMORANDUM OF SPECIAL  
PREHEARING CONFERENCE AND ORDER

1. Pursuant to the Board's Order of July 30, 1979, a Special Prehearing Conference was held on September 19, 1979 in the Nahman Diehl Auditorium, Intersection of U. S. 64 and Illinois Route 78, Mt. Carroll, Illinois 61053.

2. At the conference, there was a general discussion regarding the acceptability of the petitions for intervention; the specification of the issues; the schedule for future hearings; and the question of discovery and the lack of the NRC Staff's Site Safety Report and Site Environmental Report.

3. During the course of the hearing, the Jo Daviess County Ad-Hoc Committee on Nuclear Energy Information, through its attorney John W. Cox, Jr., orally moved pursuant to 10 CFR 2.605(b) to discontinue site suitability hearings in this matter forthwith. The Board overruled the motion at the Special Prehearing Conference and reaffirms its action in this Memorandum and Order.

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4. The Applicant orally requested leave to withdraw Findings 8 and 131 of its Proposed Findings on the issue of site suitability. The Board granted the request and reaffirms its action at the Special Prehearing Conference in this Memorandum and Order.

5. After weighing the relevant factors and finding the necessary standings, the Board determined that the petitions to intervene of the following petitioners should be granted:

- (1) The State of Illinois, as a party with the right to assume the status of an interested State after due notice on the record.
- (2) The State of Iowa, as an Interested State with the right to assume the status of a party after due notice in the record.
- (3) The Joe Daviess County Ad-Hoc Committee on Nuclear Energy Information.
- (4) Iowa Socialist Party.
- (5) Iowa Public Interest Research Group, Inc., et al. (Iowa PIRG).
- (6) Citizens Against Nuclear Power, Inc. (CANP). The CANP petition for intervention was filed jointly by CANP, James Runyon and Ed Gogol. For the purpose of these hearings, CANP and James Runyon are consolidated as CANP. Ed Gogol is not made a party hereto for lack of standing.

6. The contentions which have been tentatively accepted for the adversary proceedings which will take place to determine whether early site suitability approval will be given to the Applicant's proposed site follow:

I. The State of Illinois Contentions

4. 10 CFR §51.20(a)(5) requires that the Applicant's Environmental Report be "sufficiently complete to aid the Commission in developing and exploring - pursuant to Section 102(2)(E) of National Environmental Policy Act - appropriate alternatives." Applicants, in CCS-SS-ER Ch. 9.1 have not met the required standard in that they have failed to provide adequate discussion of alternative sites.

5. Applicants have failed to adequately show that the Plum River fault, which runs within 5.5 miles of the site, is not a capable fault in determining site geologic suitability and necessary safety measures for the proposed reactors.

6. Applicants have failed to adequately evaluate the effects of the proposed reactors upon terrestrial and aquatic life in the proposed site area generally, and specifically in the Upper Mississippi River Fish and Wildlife Refuge in that:

(a) Applicants have not adequately shown that the birds considered endangered species, including the bald eagle, which inhabit or use the proposed site will be able to relocate or find adequate substitute areas without significant increases in competition or significant effect on their populations.

(b) Applicants have failed to adequately evaluate the effects of the noise, dust, vibration and vehicular traffic during construction on wildlife and the ecology of the area.

(c) Applicants have failed to adequately evaluate the effects of the proposed water intake structure on terrestrial and aquatic inhabitants of the site and of the upper Mississippi Fish and Wildlife Refuge:

- i. There is inadequate consideration of the effects of impingement and entrainment on aquatic life;
- ii. There is inadequate consideration of the effects of the intake on spawning grounds;
- iii. There is inadequate consideration of the effects of the intake on water fowl breeding and feeding;
- iv. There is inadequate consideration of the effects of the intake on the availability of food supplies for both aquatic and terrestrial species which rely on the site and Refuge for feeding grounds;
- v. There is inadequate consideration of changes which will occur in the habitats of terrestrial species which rely on the areas to be affected by the proposed water intake.

(d) Applicants have failed to adequately evaluate the effects of the proposed water discharge system, which will carry and discharge the blowdown from the proposed cooling towers, upon the terrestrial and aquatic habitats and users of the site and of the Upper Mississippi River Wildlife and Fish Refuge in that:

- i. Applicants have failed to adequately consider either daily or cumulative effects of any radiological characteristic of the discharge on local species;
- ii. Applicants have failed to consider either daily or cumulative effects of the thermal characteristics of the discharge on local species;
- iii. Applicants have failed to adequately consider either the daily or the cumulative effect of the temperature and any regular radiation release from the discharge pipe itself upon terrestrial life surrounding it.

7. Applicants have failed to establish that operation of the proposed station 2.3 miles from Stansky Airport does not present an undue risk to the public's health and safety.

Specifically, there is insufficient data to assess the risk that an aircraft might crash into the station and environmental and safety consequences of radiological releases from the plant resulting from such an incident.

8. In determining public health and safety, applicants have failed to adequately consider or take into account the effect on the proposed reactor of explosions which could occur at the Savanna Army Depot, which is 13.2 miles from the proposed site and is used for the storage of artillery ammunition, bombs and their components, grenades, rockets, mine and engineering explosives, riot control agents, fuses, primers, pyrotechnics, and [missile] warheads (CCS-SS-SSR §2.2.2.2).

9. In determining public health and safety, applicants have failed to adequately consider or take into account the effects on the proposed reactors of explosions which could occur during the transportation of such ammunitions as mentioned above on either the Burlington Northern Railway or on Illinois Route 84.

15. The proposed Carroll County Station is located in a unique part of Illinois. It is topographically unique (CCS-SS-ER 2.6-6) and historically significant (CCS-SS-ER 2.6). Therefore there is considerable use of the area for vacationing and recreation.

(a) The Galena area, just north of the proposed Station has been preserved as an historical monument. It relies on tourists for much of its economic support and provides tourists with an historical and educational experience which is unobtainable in any other area of the state. There has been no consideration of the effect the Carroll County Station will have on the tourist population and economic well being of areas relying on tourist trade.

(b) The Galena Territory and Apple Canyon situated north of the proposed station are "second home communities". Residents have been attracted to the area because of its aesthetic and historical attributes. There has been no consideration of the effect of the Carroll County Station on real estate values of communities which are dependent on preservation of the aesthetic quality of the region.

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(c) Mississippi Palisades State park just north of Savanna provides natural woodlands for recreation and camping. There has been no consideration of the effect of the proposed Carroll County Station on the use of this facility as a source of recreation.

16. Potential areas of archeological value were not investigated in Site Suitability Environment report (CCS-SS-ER 8.3-29). The Sauk and Fox Indian Tribes occupied Carroll County along the Mississippi River until the last century and the final retreat following the Blackhawk War. Many artifacts of Indian civilization are extant. There has been no consideration of whether utilization of the Carroll County Site will cause disturbance of Indian Burial grounds and loss or destruction of archeological knowledge and artifacts significant to past and present Native American Culture.

## II. Jo Daviess County Ad-Hoc Committee on Nuclear Energy Information Contentions

II. This Site, and Applicant's Byron Station Site, are uniquely located in that each lies within six miles of the Plum River Fault which originates in Southern Wisconsin, extends southwesterly through Northern Illinois, crosses the Mississippi River at a location within five miles of this Site, and terminates near Maquoketa, Iowa. In regard to this extensive geologic formation, Applicant has not sufficiently examined, researched, and considered the following matters, as required by the NEPA, the EQIA, and 10 CFR Part 51:

- (a) The insufficiency of data regarding potential engineering, safety, and geologic difficulties resulting from a possible shifting of the Plum River Fault.
- (b) The insufficiency of data regarding such difficulties resulting from seismic activity related to such Fault.
- (c) The insufficiency of data regarding such difficulties resulting from the construction and erection of a nuclear power plant upon Parkland Sand.
- (d) The insufficiency of data regarding such difficulties resulting from the heat created by the water used to cool a nuclear power plant upon the surrounding sand prairie area at said Site, including its pipeline corridor.

III. This Site is uniquely located in that it lies within 2.5 miles of the Upper Mississippi River Fish & Wildlife Refuge, one of the nation's major nature preserves and the primary resting area for migratory birds and waterfowl in the Mississippi River Flyway. The River itself has the largest watershed in the nation, and is home to several unusual, rare, or unique species of aquatic, avian, and terrestrial wildlife. In regard to these ecological concerns, Applicant has not sufficiently examined, researched, and considered the following matters, as required by the NEPA, the EQIA, and 10 CFR Part 51:

- (c) The effect of displacement by construction, maintenance, and operation of a nuclear power plant at this Site upon the habitats of beaver and marsh hawks known to be in the area.
- (d) The effect of the operation of the water intake and discharge system, and its potential for thermal increases, upon the aquatic, avian, and terrestrial wildlife habitats of Pool 13, its adjacent marshlands and sand and native prairies, and surrounding uplands.
- (e) The effect upon migratory flight and resting patterns and habitats, of fogging and icing, and of salt drift and deposition, from the Site's cooling towers.
- (f) The effect of the strong River current upon the potential transportation of contaminated discharges into Pool 13.
- (i) The following hydrological concerns:
  - (1) the high potential for contamination of the unconsolidated aquifers located under said Site.
- (j) The following meteorological concerns:
  - (1) icing and fogging;
  - (2) salt drift and deposition;
  - (3) the effect of severe snow and glaze storms (which are common in the Site area) upon aquatic, avian, and terrestrial wildlife habitats, in relation to the foregoing meteorological concerns.

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IV. As with all locales for which a nuclear power plant site is proposed, the Jo Daviess - Carroll Counties present a vast number of unusual social and demographic qualities for our concern. In these regards, Applicant has not sufficiently examined, researched, and considered the following matters, as required by the NEPA, the EQIA, and 10 CFR Parts 50 and 51:

- (a) The effect of construction, maintenance, and operation of a nuclear power plant at said Site upon the population and population density computations put forth in Applicant's Environmental and Safety Reports.
- (b) The proximity of said Site to overt military targets, namely the Savanna Ordnance Depot which lies seven miles to the Northwest of the Site, and the Savanna railroad yards which lie three miles to the Northwest of the Site.
- (c) The proximity of said Site to Carroll County's major airport, namely Stansky Memorial Field which lies two miles to the Northwest of the Site, and the incumbent difficulties therein concerning lines of approach and departure and local operations.
- (d) The necessity that Applicant's pipeline corridor will temporarily and permanently disrupt six roads, one railroad, one powerline, an area of native prairie, and two canals in order to be constructed, maintained, and operated.
- (e) The effect of construction, maintenance, and operation of a nuclear power plant upon this Site, upon the potential for soil erosion and the replacement of prime farmland by more marginal land.

V. While it appears true that the selection of a nuclear power plant site heralds a short-term increase in local economies occasioned by the construction process, the long-term local economic effects are of more essential concern to the residents of the Site 50 mile area. In this regard, Applicant has not sufficiently examined, researched, and considered the following matters, as required by the NEPA, the EQIA, and 10 CFR Parts 50 and 51:

- (a) Inasmuch as the major economy of the Site 50 mile area is the herding of dairy, beef, and pork animals and the cultivation of crops, Applicant has failed to provide sufficient data regarding the following agricultural concerns:

- (3) the effect of fogging and icing, and salt drift and deposition, upon the agricultural economy.
- (4) the potential in this Site project for the economic displacement of area residents, that is farmers and their families, away from the area and toward the urban environment.
- (b) The potential for discouragement of the transient recreational and tourist economy of the Site 50 mile area because of the construction, maintenance, and operation of a nuclear power plant at said Site.

### III. Iowa Socialist Party Contentions

1. In their Site Safety Report, the applicants have not demonstrated all the safety and environmental aspects of the site have been adequately met under the requirements of 10 CFR and the National Environmental Policy Act, in that:

- a. adverse effects on land use patterns in the area have not all been fully considered and detailed, such as,
  - (ii) failure to adequately consider geological characteristics of the area such as the Plum River Fault.
- b. the economy of the area would be negatively impacted to a greater degree than described by the applicants, for example,
  - (i) greater loss in property values than described.
  - (ii) greater loss in productive capacity of the land than described.
  - (iii) greater impact on the local housing market than described.
- c. the siting of the plant would increase the likelihood of adverse effects on community characteristics of the area, for example,
  - (i) an increase in the likelihood of disease from low-level radiation effects would increase migration from the area.
  - (ii) people would move from the area in fear of an accident.

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- d. adverse effects on crops, livestock, and other vegetation have not all been fully considered and detailed, such as,
  - (i) loss of productive capacity from low-level radiation.

#### IV. Iowa Public Interest Research Group, Inc. Contentions

1. The Applicants have not demonstrated, in their Site Safety Report, that the Plum River Fault Zone is not a capable fault within the definition used in 10 CFR Part 100, Appendix A, in that no proof is available beyond a period including the last 200,000 years that there has been no recurring activity within the last 500,000 years.

2. Applicants' proposed finding #109 cannot be made as requested, insofar as WASH-1238 and its update, NUREG-75/038, are currently outdated. The information in Summary Table S-4 in 10 CFR Part 51 is in need of revision, and no finding based on it can be made as requested. Further, this is not a matter of law beyond the scope of the Atomic Safety and Licensing Board, but is a substantive consideration bearing upon proposed findings of fact.

3. The range of socioeconomic impacts of station construction and operation have not been adequately identified, in that:

- (b) the losses of farm land and agricultural productivity referred to above will be greater than identified in the Applicants' Environmental Report;

- (c) since Carroll County has an economy based primarily upon agriculture, effects on the agricultural economy from both construction and operation of the plant, ripple through a much larger segment of the local economy than those directly affected, and this ripple effect is neither mentioned nor identified;

- (d) no attempt was made by the Applicant to quantify the effects of increased costs and inflation in the local housing market upon elderly and low-income renters;

(e) it is not apparent from the information provided, that the necessary labor force can be secured for construction without a negative impact upon other construction priorities in the area during the same period, and no such impact has been identified or quantified;

(f) displacements in the local housing market have been underestimated;

(g) no attempt has been made to determine the extent to which construction and operation of the Carroll County Station will have an adverse impact upon the decisions of residents of the immediate vicinity to remain in the area, and the potential impact of their decisions on the local labor market, housing market, social atmosphere, schools and economy. This failing is particularly crucial in view of the large and growing percentage of the population throughout the United States who harbor serious doubts about the safety of nuclear generating stations, and would not choose to remain in a community chosen as the site for such a facility.

10. The requirements of the National Environmental Policy Act, 10 CFR Part 20, and 10 CFR Part 51 have not been met in that the Applicants' Early Site Review fails to detail adequately the impact of the proposed site on the terrestrial and aquatic ecology of the area, including:

(a) failure to adequately assess the effect of thermal pollution on fish and wildlife spawning grounds in the Upper Mississippi River Fish and Wildlife Refuge;

(b) failure to adequately evaluate the effect of potential discharges of radioactively contaminated water discharges upon fish and wildlife in the Upper Mississippi River Fish and Wildlife Refuge, including the particularly crucial effect of contamination of the water in the spawning grounds within the Refuge;

(c) failure to adequately evaluate the effects of algicidal contents in water outflow upon fish and wildlife in the Mississippi River;

(d) failure to adequately measure the populations of blue-green algae, particularly Aphanizomenon flos-aquae and Microcystis aeruginosa;

(e) failure to adequately assess the impact of rising water temperatures from plant discharges on the populations of Aphanizomenon flos-aquae and Microcystis aeruginosa;

(f) failure to adequately evaluate the effects upon fish and wildlife from construction activities at the proposed site, such as stirring up dust and sand which would deposit a film of soot upon fish and wildlife, and bodies of water, in the Upper Mississippi River Fish and Wildlife Refuge and in other areas surrounding the site, thereby hampering the growth and reproduction of both terrestrial and aquatic plant and animal life.

7. The determination of the acceptability of the following contentions is held in abeyance pending the publishing of the Three Mile Island NRC Staff report or further Commission action.

(a) Iowa Socialist Party Contention:

1(a)(i) lack of safe and adequate roads in the site area for transportation to and from the site and for evacuation in the event of an on-site accident.

(b) Iowa Public Interest Research Group, Inc. Contention:

7. The site chosen by the Applicants presents very limited options for away-from-downwind evacuation in the event of an on-site accident that would necessitate such action, including the fact that the only bridges spanning the Mississippi River within a reasonable distance of the site are toll bridges which would unnecessarily hamper the flow of traffic in an evacuation.

## (c) Citizens Against Nuclear Power Contention:

15. Illinois has no federally approved plan for evacuating populations in the event of catastrophic accident. No such plans exist for the Carroll County area, and it is likely that no suitable evacuation plan will be found.

8. The Applicant, the NRC Staff and the Intervenor will have thirty (30) days from the date of this Memorandum of Special Prehearing Conference and Order in which to submit briefs in support of any contentions which were previously filed and which have now been rejected by the Board. Arguments in the brief will also be considered which urge the Board to weigh again the acceptability of the contentions which are set forth above.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND  
LICENSING BOARD

Robert L. Holton by J.F.W.  
Robert L. Holton

Glenn O. Bright  
Glenn O. Bright

John F. Wolf  
John F. Wolf, Chairman

Dated at Bethesda, Maryland

This 10th day of October 1979.

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