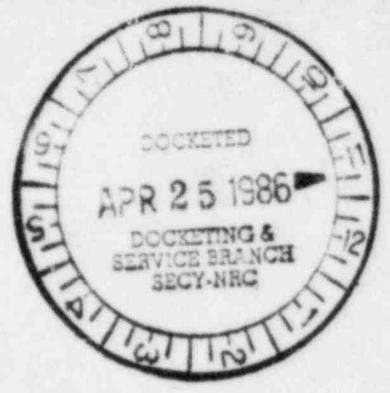


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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of)	
)	Docket Nos. 50-456-0L
COMMONWEALTH EDISON COMPANY)	50-457-01
)	
(Braidwood Station, Units 1 and 2))	

INTERVENOR'S PROPOSED FINDINGS
ON EMERGENCY PLANNING ISSUES

Pursuant to 10 CFR § 2.754, Intervenor hereby files this
Intervenor's Proposed Findings on Emergency Planning Issues.

Intervenor has organized this material in the following manner:

- A. Proposed Findings of Fact on Contention 1 (a)
(Pre-accident Public Information)
Findings 1-8
- B. Proposed Findings of Fact on Contention 1 (a)
(Pre-accident Public Information) and Contention 1 (a)
(Offer of Proof Issue 2)
Findings 9-12
Intervenor has followed each proposed finding or group
of proposed findings in A. and B. with a short discussion
- C. Proposed Conclusions Based on Proposed Findings of Fact

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A. Proposed Findings of Fact on Contention 1 (a) (Pre-accident Public Information)

Contention 1 (a) (Pre-accident Public Information) states:

Intervenor contends that an adequate emergency plan for the Braidwood Station should include the following:

- (a) A program to periodically inform the public within the plume exposure pathway Emergency Planning Zone (EPZ) on how they will be notified and what their initial actions should be in the event of a radiological emergency originating at the station.

Proposed Findings

1. The only method by which the public within the Emergency Planning Zone will learn how they will be notified and what their initial actions should be in the event of a radiological emergency originating at the station is the booklet entitled "Emergency Information - Braidwood."

Discussion on Finding 1

Applicant submitted only the booklet as an exhibit in the hearing on October 29, 1986. Applicant's witness Lawrence D. Butterfield, Jr. stated in his testimony that the principal method for informing the public is the publication and distribution of the booklet. He adds that "other means of communication to supplement the booklet are being considered in cooperation with the state." (Butterfield testimony on Contention 1 (a), page 7, A.10)

He later states "Commonwealth Edison is undertaking discussions with the appropriate state authorities to develop a sign for use in state recreational areas." He goes on to say that if this concept is accepted by the state, Commonwealth Edison Company will discuss with private camp and recreational area operators the placement of these signs in their areas. (Butterfield testimony on Contention 1 (a), page 14, A.16)

In the Testimony of Lawrence D. Butterfield, Jr. and Jana S. Fairrow Regarding Contentions 1 (a) and 1 (b) (Emergency Planning), witnesses respond to a direct question about whether signs will be placed at recreational areas by answering:

A.82. Yes. Signs will be provided to each of the recreational areas informing visitors of the purpose of the sirens and instructing them to listen to either of the two EBS Stations which will broadcast emergency information.

However, the exact wording of the signs was given by neither Miss Fairrow nor Mr. Butterfield. (TR 734) To the extent that it was incumbent upon the Applicant to present any other such pre-accident information in its entirety for litigation, it cannot be assumed there exists or will exist any other means than the booklet of informing the public of how they will be notified and what their initial actions should be in the event of a radiological emergency originating at the station.

Furthermore, the signs, if used, would not constitute an acceptable part of a program to inform the public in accordance with Contention 1 (a) because Mr. Butterfield stated in cross-examination that the signs "do not indicate why specifically the signs are there; that is, that you are in the Braidwood EPZ." (TR 734 15-17) If the public is unaware of the possibility of a radiological emergency, then they are not properly informed on how they will be notified and what their initial actions should be in such an emergency.

2. Applicant's public information program assumes that the adult population is able to read.

Discussion on Finding 2

Applicant did not conduct any studies on illiteracy in the Emergency Planning Zone (TR 466 5-8) and did not indicate any familiarity with general illiteracy studies. Applicant also assumed that those who are visually impaired would either have someone to read the booklet to them, or would notify the State to be put on a special program. (TR 477 12-25, 478 1-13) This assumption is hopeful at best.

There are people not legally blind, who are able to conduct their lives quite normally except for their inability to see clearly enough to read. Such people may be embarrassed and will not let others know

of their inability. Since such a person would not read the booklet and fill in the form requesting the state put him on a special program, Applicant has failed to provide a public information program which adequately informs him.

Similarly, those who are illiterate are often in no hurry to make their inabilities known. Applicant has also failed to provide a public information program which adequately informs those people.

3. The booklet entitled "Emergency Information - Braidwood" does not address the nature of the danger of a radiological accident.

Discussion on Finding 3

Section 8, "Radiation," of the booklet, describes what radiation is and how it is measured. It also discusses the effect of the radiation from an average nuclear plant on a hypothetical person living for a year at the fence of the plant and the size of a radiation dose which would produce identifiable effects in the body.

The section does not discuss how radiation affects the body, or what amounts of radiation might be released from a nuclear plant in an accident.

Applicant's booklet states the importance of emergency preparedness: "But as with any potential emergency, your safety could depend

on your preparedness." (Booklet inside cover, para. 2)

Typical preparedness programs on a variety of other potentially dangers attempt to describe what the nature of the danger is. Programs on tornadoes and fires typically show the kind of damage which tornadoes or fires can do; it is considered part of impressing on an audience the importance of taking emergency planning seriously. Miss Fairrow indicated in re-cross-examination that

A. (WITNESS FAIROW) Just recently -- I believe last week was Tornado Awareness Week, and information was provided to the media so that they could broadcast information.

Some schools performed their own tornado drills, and our agency and the ESDA agencies at the county level go out and do programs as requested on tornadoes.

Applicant has stated in several places in the emergency information booklet the unlikelihood of an accident occurring. In order that the public not brush off the important information about evacuation contained in the booklet, those statements need to be balanced with a short description of how radiation adversely affects the body and what the possible consequences of nuclear accidents might be.

4. Applicant has committed to modify the language of the booklet in its next issuance to include the following language as the last full paragraph of Section 8:

If a nuclear plant accident were ever to occur, teams of specially-trained personnel would be sent to get even more detailed radiation readings all around the plant. In most cases, there would be no excessive radiation. If the accident were serious, and could expose members of the public to 100 millirem or more of radiation, state plans call for protection of the public by taking shelter indoors or by evacuation. The most probable form of radiation which could be found beyond the plant boundaries would be contained in a cloud or plume. This cloud would move in the prevailing wind direction and would dictate the areas for potential shelter or evacuation recommendations.

5. The additional information as stated in Finding 4 does not resolve the plume issue, because the information concerning the radioactive plume is significant enough to deserve a separate paragraph.

6. The additional information as stated in Finding 4 does not resolve the plume issue, because no possible physical characteristics or lack of characteristics of the radioactive plume are given.

7. The additional information as stated in Finding 4 does not resolve the plume issue because such information should be keyed back to earlier passages or sections which are affected by it.

Discussion on Findings 4-8

At the time of the October 29, 1986, hearing, there was no direct discussion of a radioactive plume anywhere in the emergency information

booklet. Applicant's witness, Mr. Butterfield, said that there is an oblique reference to a radioactive plume in the booklet:

A. There is one, what I will call, oblique reference to it. In Section 4 where the map is, in the center of the book, there is an item under the last bullet, in an emergency stay tuned to. The following paragraph, the last sentence says: Other routes than those above may be given on the radio depending on road and environmental conditions.

The reason that's in there is because you chose that depending on environmental -- and, by the way, we are intending to change that word to, in the future, weather because it is more understandable than environmental conditions, to weather conditions.

It -- in my opinion, that implies that in one direction or another because of plume or other weather conditions. (TR 483 20-25, 484 1-9)

After more discussion on the radioactive plume (TR 485 1-25, 486 1-25, 487 1-25), Judge Grossman asked Mr. Butterfield

JUDGE GROSSMAN: Well, let's see if we can get a responsive answer to what I think you are driving at.

I believe the question is directed at asking wouldn't the public respond -- be more responsive to following the routes given on the radio if they were made aware of the fact that there is more than just weather conditions involved, but that there is also radioactive plume which they ought to consider in following these conditions.

WITNESS: In my opinion, yes.

In re-direct questioning, Mr. Flynn asked Mr. Butterfield about Commonwealth Edison's efforts to ensure the readability of the brochure. Mr. Butterfield responded:

A. As the emergency information brochure has evolved to its present state, persons under my direction

have reviewed it for readability, and have tried to make changes as they felt would make it more clear and readable to the people to whom it was intended to be sent.

Q. Has that effort influenced the amount of detail presented in the brochure?

A. Not to any great extent to my knowledge. It is primarily to simplify the words, to make it more clear. To provide standout features. Make it more appealing. (TR 490 9-19)

Intervenor agrees that it is important that the booklet be readable. Because of this, Intervenor feels that to add to the final paragraph in the section on radiation two sentences which introduce the concept of a radioactive plume interferes with both the readability of the brochure and public understanding of the importance of the information.

The language proposed by Applicant to discuss a radioactive plume is also deficient in that it does not describe what a plume or cloud might or might not look like. In the first paragraph in Section 8, radiation is described as invisible, silent, tasteless, and odorless. The words "plume" and "cloud" carry definite ideas of visibility, and the matter may therefore be confusing to the public.

If the term "weather conditions" is meant to be inclusive of the concept of a radioactive plume, there should be some such indication in the copy in Section 4. This might be accomplished by a parenthetical phrase following the sentence quoted by Mr. Butterfield in TR 483 20-25:

Other routes than those above may be given on the radio, depending on road and weather conditions.
(See Section 8 for a discussion on radioactive plumes.)

Otherwise, the reader of the booklet may not understand the oblique reference to a radioactive plume. He may respond to "weather conditions" as he already understands the term and not follow the instructions given on the radio as to evacuation routes.

8. In Section 1 of the emergency information booklet, bullet 4, the first sentence should read "You will be given information and instructions." rather than "You will be given information and instructions if there is a real call for concern."

Discussion on Finding 8

It was elicited from cross-examination of the NPC staff witness, Mr. Gordon Wenger, that there are not instances in which the sirens are sounded without follow-up. (TR 534-536) The most pertinent questions and answers proceeded as follows:

Q. (By Ms. Rorem) In that case wouldn't, given that sirens are not sounded without follow-up, that is on one of the radio stations, wouldn't the sentence mean the same thing if it said simply you will be given information and instructions period?

A. Yes.

Judge Grossman: A further question is are those words "if there is a real cause for concern," misleading in that it suggests that there are situations in which the siren will sound and no information and instructions will be given?

The witness: It would not be the case that the sirens would sound and there wouldn't be follow-up information.

Judge Grossman: So that if you had ended the sentence after the bold letters, "instructions," you would be describing every situation. But now isn't it true that with those further words in there, "if there is a real cause for

concern," there is a suggestion that there is another possibility that there is a case in which a siren will sound and no instructions will be given because there is no real call for concern?

The witness: I believe I understand what you are saying.

If I may, the sirens would be sounded if there is a call for concern, meaning there will be information following for you to by chance take protective measures. (TR 535 21-25, 536 1-22)

Applicant has argued that the information in the booklet has been made as concise and readable as possible. To the extent that the phrase "if there is a real call for concern" is misleading in Section 1 of the booklet, it should be eliminated.

9. Applicant's means of distribution of the emergency preparedness booklet (Emergency Information -- Braidwood) is deficient in that it does not cover all possible residents of the Emergency Planning Zone.

Discussion on Finding 9

This issue was discussed at some length in the October 29, 1985 hearing. (TR 480 12-25, 481, 482, 490 20-25, 491 1-6, 498 6-25, 499 1-10, 500 1-21, 504 20-25, 505, 506, 511 22-25, 512, 513 1-12)

Applicant argued that its method of distribution of the booklet, covering both billing and service addresses, would assure that all households would receive a booklet.

However, cross-examination established at least one instance where neither the billing nor the service address copies of the booklet would reach an actual resident. If the owner of a residence, who should receive either a booklet sent to billing address, or a booklet sent to

service address, or both, were absent and having mail forwarded, any copies of the booklet would be forwarded to him.

A person who was subletting a residence might not receive any copies of the booklet.

B. Proposed Findings of Fact on Contention 1(a) (Pre-accident Public Information and Contention 1(a) (Offer of Proof Issue 2)

Contention 1 (a) (Pre-accident Public Information) states:

Intervenor contends that an adequate emergency plan for the Braidwood Station should include the following:

- (a) A program to periodically inform the public within the plume exposure pathway Emergency Planning Zone (EPZ) on how they will be notified and what their initial actions should be in the event of a radiological emergency originating at the station.

Contention 1 (a) (Offer of Proof Issue 2) states:

Applicant must develop and demonstrate its capability to provide through scripts and/or other media information, substantive emergency information to adequately inform the public of emergency information in the event of an accident at the Braidwood Station through all radio, TV or EBS stations in the ingestion pathway zone, so as to enable the public to effectively evacuate in the event of an emergency and to effectively re-enter the affected zone in the event of an emergency.

Proposed Findings

9. Section 3 of the booklet entitled "Emergency Information -- Braidwood", bullet 2 states:

GATHER THE PEOPLE in your home TOGETHER. If you have children or others at schools, hospitals, overnight

campground or nursing homes, DO NOT try to pick them up. These facilities will be following their own evacuation procedures, and you would probably miss connections. STAY TUNED to one of the radio stations listed earlier for information on where persons are being moved. Students, patients and nursing home residents will be accompanied by Staff to relocation centers. Their needs, including medical needs, will be provided for until they are reunited with their families.

10. The information provided in the booklet is not sufficient to deter individuals responsible for school children or persons at recreational areas from attempting to pick them up.

11. The information provided in the shelter and evacuation recommendation messages reads, "All school children, nursing home residents and hospital patients are being attended to by trained personnel. There is no need to go there to pick anyone up." (IPRA Vol. 1, Ch. 2)

12. The information provided in the shelter and evacuation recommendation messages is not sufficient to deter individuals responsible for school children or persons at recreational areas from attempting to pick them up.

Discussion on Findings 9-12

It can be assumed that there is an important basis for the instructions to not pick up children or others at schools or recreational facilities. Perhaps the most obvious concern is that traffic might be tied up and impeded if people are travelling in directions other than away from the plant.

In many of the small towns around the Braidwood plant, parents and other responsible parties may live within several blocks of the school, or several miles from recreational facilities. If they are familiar with their communities, they may realize that the buses which will evacuate their children may be eight to twelve miles away, and their concern with evacuating all members of their families as quickly as possible may lead them to ignoring the instructions.

This issue was covered at some length during cross-examination of Applicant's witness Miss Fairrow. (TR 843-855, 1013-1015) In both days of the March hearing Miss Fairrow acknowledged the reasonableness of parents wanting to pick their children up under circumstances such as that described above. (TR 851 14-22, 1013 22-25, 1014 1-6)

If there is another concern in this issue, such as fear of exposure to radiation to members of the public, the booklet should contain an explanation of the nature of the danger in such a way as to enhance the willingness of the public to follow instructions.

C. Proposed Conclusions Based on Proposed Findings of Fact

Intervenor urges the Licensing Board to require the Applicant to repair deficiencies in its public information program to correct the problems indicated in the Intervenor's Proposed Findings:

1. Applicant should develop other means of informing the public, such as video presentations, slideshows, radio information programs, so that those who are not able to read are able to understand the information necessary to assure that in the event of an emergency the public can and will be adequately protected.

2. Applicant should develop and present a specific message to be used on signs within the EPZ, including information about why the signs and siren system exist.

3. The booklet should be written to include some information on the nature of the danger in a nuclear accident.

4. Applicant should give a separate paragraph in Section 8 to the information on a radioactive plume.

5. Applicant should include in this information some description of the possible physical characteristics of a radioactive plume.

6. Applicant should key back the information on a radioactive plume to earlier passages which are affected by it.

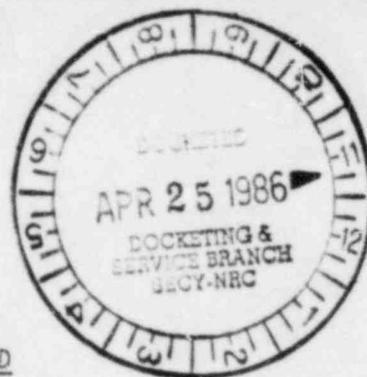
7. Applicant should omit the misleading phrase "if there is a real cause for concern: in Section 1, bullet 4 of the booklet.

8. Applicant should make available booklets for distribution to new box holders and those who receive their mail through general delivery.

9. Applicant should develop public information programs which address specifically the issue of deterring parents and other responsible individuals from ignoring instructions to not pick up children or others at schools or recreational facilities.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of)
COMMONWEALTH EDISON COMPANY) Docket Nos. 50-456-0L
(Braidwood Station, Units 1 and 2)) 50-457-0L

CERTIFICATE OF SERVICE

I hereby certify that copies of the attached intervenor's Proposed Findings on Emergency Planning Issues were served on the persons listed below by deposit in the United States mail, this 21st day of April, 1986.

Herbert Grossman, Esquire
Chairman
Administrative Law Judge
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. Richard F. Cole
Administrative Law Judge
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. A. Dixon Callihan
Administrative Law Judge
102 Oak Lane
Oak Ridge, TN 37830

Docketing and Service Section
U.S. Nuclear Regulatory Commission
Office of the Secretary
Washington, D.C. 20555

Atomic Safety and Licensing Board
Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

George L. Edgar, Esquire
Newman & Holtzinger, P.C.
1615 L Street, N.W.
Washington, D.C. 20036

Stuart Treby, Esquire
Elaine I. Chan, Esquire
Office of the Executive Legal
Director
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Robert Guild, Esquire
Douglass W. Cassel, Jr., Esquire
Timothy W. Wright, III, Esquire
BPI
109 North Dearborn Street
Suite 1300
Chicago, Illinois 60602

Charles Jones, Director
Illinois Emergency Services
and Disaster Agency
110 East Adams
Springfield, Illinois 62705

Elena Z. Kezelis, Esquire
Isham, Lincoln & Beale
Three First National Plaza
Suite 5200
Chicago, Illinois 60602

William Little, Director
Braidwood Project
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Janice A. Stevens
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Phillips Building
Bethesda, MD 20814

Joseph Gallo, Esquire
Isham, Lincoln & Beale
1150 Connecticut Avenue, N.W.
Suite 1100
Washington, D.C. 20036

Bridget Little Rorem
Bridget Little Rorem
Appleseed Representative

21 April 1986