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OFFICE OF SECRETARY
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AND GENERAL COUNSEL

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THOMAS H. MILLER, JR.

IRENE A. MCKENNA

ASSISTANT COUNSEL

September 21, 1984

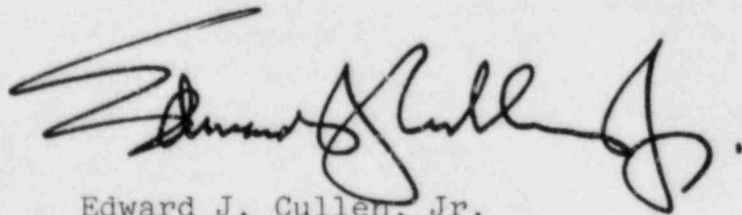
Ms. Maureen Mulligan
Limerick Ecology Action
762 Queen Street
Pottstown, PA 19464

Re: Limerick Generating Station, Units 1 and 2
Docket Nos. 50-352 and 50-353 o c

Dear Ms. Mulligan:

In accordance with the Board's Order of June 1, 1982, I am enclosing copies of correspondence and documents regarding emergency planning among Applicant, NRC Staff, the Commonwealth of Pennsylvania and other responsible governmental agencies.

Very truly yours,



Edward J. Cullen, Jr.

EJC, JR:pke

Enclosures

8409240452 840921
PDR ADOCK 05000352
G PDR

DS03

cc: Judge Lawrence Brenner (w/o enclosure)
Judge Peter A. Morris (w/o enclosure)
Judge Richard F. Cole (w/o enclosure)
Judge Christine N. Kohl (w/o enclosure)
Judge Gary J. Edles (w/o enclosure)
Judge Reginald L. Gotchy (w/o enclosure)
Troy B. Conner, Jr., Esq. (w/enclosure)
Ann P. Hodgdon, Esq. (w/enclosure)
Mr. Frank R. Romano (w/o enclosure)
Mr. Robert L. Anthony (w/o enclosure)
Zori G. Ferkin, Esq. (w/enclosure)
Mr. Thomas Gerusky (w/o enclosure)
Director, Pennsylvania Emergency (w/o enclosure)
Management Agency
Charles W. Elliott, Esq. (w/ enclosure)
Angus Love, Esq. (w/o enclosure)
David Wersan, Esq. (w/o enclosure)
Robert J. Sugarman, Esq. (w/o enclosure)
Martha W. Bush, Esq. (w/o enclosure)
Spence W. Perry, Esq. (w/o enclosure)
Jay M. Gutierrez, Esq. (w/o enclosure)
Atomic Safety & Licensing (w/o enclosure)
Appeal Board
Atomic Safety & Licensing (w/o enclosure)
Board Panel
Docket & Service Section (w/enclosure - 3 copies)
James Wiggins (w/o enclosure)
Timothy R. S. Campbell (w/o enclosure)



ENERGY CONSULTANTS

Riverside Office Center 3 • 2101 N. Front St. • Harrisburg, PA 17110
(717) 236-0031

Service

September 10, 1984

Mr. Wilmer Borneman
Radio Station WBYG
Box 177
Boyertown, PA 19512

Dear Mr. Borneman:

Thank you for meeting with Mr. Reber and me regarding the Emergency Broadcast System of Berks County.

We appreciated your time and the opportunity to tour your facility, and we thank you for your letter of agreement.

I have expressed your thoughts regarding Montgomery County to Mr. Cunningham of our office who works with the Montgomery County Office of Emergency Preparedness (OEP). He is discussing your situation with Mr. Bigelow of Montgomery County OEP.

With regard to the monitoring assignments, I have contacted Mr. Gary Bowes of the Pennsylvania Emergency Management Agency for clarification.

If you have any questions or desire any additional information, please contact either Mr. Reber or me.

Sincerely,

Henry C. Tamanini

Henry C. Tamanini

HCT: jr

cc. Mr. Reber - Berks EMS
Mr. Bowes - PEMA
Mr. Cunningham

TO: Methacton School District Evacuation Committee Members
FROM: Jim Brown, Chairperson
RE: Attached meeting notes - Meeting #5 - August 23, 1984
DATE: August 31, 1984

As you can see by the attached notes, Nancy Catton did an excellent job serving as secretary during the August 23 committee meeting. Her notes are so thorough and extensive that I have simply xeroxed the copy she sent to me and made it available to all members of the committee. I would also like to again thank Tyrone Johnson for lining up our excellent speaker.

Please note that the next two meetings have already been scheduled. Meeting #6 will be held on Thursday, September 6, at 7:30 pm. It will be my goal at this meeting to look at the existing draft of the Methacton School District Emergency Evacuation Plan (3b) and specifically look at pages 28 to the end of the plan and "get moving" in terms of making specific revisions to this plan. There is also a forthcoming committee meeting scheduled for Tuesday, September 25, 7:30 pm. Both of these meetings will be held at Arrowhead Elementary School. It is hoped that as many committee members as possible will be able to attend both of the aforementioned meetings, since we will be making a sincere effort to "get moving".

cc: Mr. John Cummington
Mr. Lin Bigelow
Dr. Warner
Mr. Derr

(Nancy Catton's notes)

COMMITTEE MEMBERS PRESENT: Jim Brown, Jackie Cranalla,
John Rafferty, Elaine Graham, Les Carlton, Frank Panaia,
Carl Daddona, Tyrone Johnson, Nancy Catton

GUESTS PRESENT (from Lower Providence Township's task force on
evacuation planning): Pat Alker; Harry Bechtel.

COMMITTEE MEMBERS ABSENT: Richard Oesterling, Nancy Koehler, Lee Seitz

GUEST SPEAKER: Dr. M. Shanbaky, Chief of Radiation Protection,
Region I, NRC, King of Prussia. (Telephone: 337-5258.) *

Dr. Shanbaky, who has a background in physics, has for many years
been involved in inspecting nuclear power plants (including TMI,
before the accident) for radiation protection, and in enforcing
NRC regulations for radiation risk and exposure. He gave each
member of the group the following printed material:

- 1) U.S. Nuclear Regulatory Commission Regulatory Guide 8.29:
Instruction Concerning Risks from Occupational Radiation
Exposure (July, 1981) (17 pages);
- 2) Four tables of protective action guidelines;
- 3) A diagram showing radiation exposure pathways from
environment to man;
- 4) Four tables concerned with radiation doses to the popula-
tion from various sources;
- 5) A chart entitled "Compute Your Own Dose" (total millirems
per year of radiation from various sources);
- 6) Two "fact sheets" comparing risks to health and life
posed by various factors such as eating pie à la mode
and smoking cigarettes with those posed by radiation.

Dr. Shanbaky presented some technical information and graciously
answered all questions asked by the group. According to my notes
he told us the following:

"Contamination" may best be described as "radioactivity where it
shouldn't be." It is very difficult to detect normal releases
of radiation from a nuclear plant. (In his ten years in the
field Dr. Shanbaky has found no evidence in environmental data.)
NRC standards for permissible levels of radiation are based on
the entire population, considering every segment of society,
including children. The NRC's philosophy is to keep exposure
as low as possible. A normal release of radiation into "liquid
pathways" (rivers, lakes) is restricted to no more than 3 milli-
rems. Normal operational release allowable is up to 500 mrem
per year. However, said Dr. Shanbaky, "we can't operate this
way," but must keep exposure as low as possible.

Water that cools the towers cannot become contaminated, since
the cooling system is closed. However, a small amount of
corrosion in the pipes might cause a small amount of release

*Dr. Shanbaky offered to answer additional questions by phone.

from the cooling towers. Peach Bottom is undergoing very expensive repairs to the water system necessitated by corrosion and by faulty welds, with vibration in the pipes. Improvements being made at Peach Bottom have been incorporated into Limerick from the outset.

At TMI the three very big accidents were all caused by the operators' wrong actions. Falsification of records such as occurred at TMI is now discouraged by the policy of having two resident inspectors at each nuclear facility. However, this policy may not be completely foolproof.

It is very difficult to quantify the risks to health posed by radiation. (As an analogy, can anyone quantify the risk to health of one cigarette?) It is clear that a certain amount of radiation can be dangerous. Medical exposure to radiation, as in X-rays, is not regulated and can be cumulatively high. Most low level waste is from medical sources; most high level waste is spent fuel. The EPA regulates radioactive waste.

In an accidental large release of radiation, the release would probably be confined to several miles. The whole area would be checked for radiation. The main releases to look for would be of noble gases, which do not adhere to anything, and of iodine.

Radiation doses from the plume come through inhalation, skin absorption, and ingestion (as of contaminated crops). (Whether radioactivity is diluted or concentrated in the food chain depends on the isotope in question. Radiation in the cow is released mostly in milk.) There might have to be steps to decontaminate property - buildings, soil, etc. - in the aftermath of an accident. Delayed harvesting of crops might be necessary.

In an emergency, protective action would commence when releases reach 1 REM. A whole body dose of 1-5 REMS -- or a projected release of 1-5 REMS within 6-8 hours -- would cause an evacuation from the area, if there were no constraints. (See Table 2.1 on protective action.) Constraints are those factors such as bad weather, excessively heavy traffic, dense population, which would in themselves pose hazards during an evacuation. All risks are weighed before an evacuation is ordered. An evacuation is declared by the Governor if he deems it necessary after he has been supplied with information by the NRC. The higher the population density, and the bigger the constraint, the higher the dose would be before an evacuation would take place.

Most nuclear accidents have lingered on for hours with very low releases. In a worst case scenario, 1 REM per hour of additional radiation might be released. One REM per hour "for the next 10 hours" would be considered a very high dose; the limit for plant workers is a maximum of 3 REMS per year. (See p. 8, Section 12, of the NRC Regulatory Guide for clarification.)

In considering whether an evacuation should be ordered, the projected dose of radiation is used. This is estimated by noting the temperature of the reactor system, pressure, etc., so there will usually be time "for a conclusion."

It is probably safest not to evacuate but to stay inside a building when the release, up to 5 REMS, is of short duration (0-4 hours), as the plume passes over. Efficacy of sheltering would depend on the structure of the building, wind direction, and type of release. Sheltering might help to avoid skin and inhalation doses (or to minimize them). Although there is some leakage of air into a building, the air concentration is not in equilibrium with the air concentration outside. Wet cloths held to the face would probably be of no use. In sheltering the most important thing is to get away from the plume. A basement would afford better protection than the upper floors of a building would.

The use as a host school of a building which is to be a decontamination center, or which is near a decontamination center, would not be a good idea.

Dr. Shanbaky suggested that another program with a speaker from the NRC who is an authority on protective action might be helpful to us.

Following Dr. Shanbaky's presentation, Jim Brown told the group that he thought reports on the drill held on July 25 were generally positive. He said he will check to see whether Dr. Warner was notified. Mr. Bigelow sent Jim guidelines on emergency information, but no maps yet. Mr. Cunnington has contacted Norristown High School, but not Montgomery County Community College, since Norristown seemed somewhat promising as a host school. (No decision has been made, however.) The emergency notification system is being worked on. It may be a computer system, and could be used in any kind of emergency. Bucks County is indecisive about hosting evacuees. However, PEMA can make Bucks County participate.

Harry Bechtel said that there may be another drill, in September or October - not a full-blown drill - for those groups that did not participate in the July 25th drill.

Tyrone said that the two-way radios for the buses have been approved, and that ten are being installed, as a beginning.

Les Carlton asked whether the \$5000 given by PECO to each community included schools. Doubts were expressed whether Worcester would give the school district its \$5000, even though Worcester's participation in an evacuation would be minimal.

Frank suggested that it might be worthwhile for the school to go through a later drill while school is in session, although there might be expense involved.

The next meetings for the committee are Thursday, September 6 and Tuesday, September 25, both at 7:30 at Arrowhead School.

Nancy Catton

Ken-Crest Services

RIVER CREST CENTER • ROUTE 29 • MONT CLARE, PA 19453 • (215) 935-1581 or (215) 248-5120

September 5, 1984

Mr. A. Lindley Bigelow
Coordinator
Montgomery County Office of
Emergency Preparedness
100 Wilson Boulevard
Eagleville, PA 19408

Dear Mr. Bigelow:

Energy Consultants will be providing you with four (4) copies of Revision 0 of the River Crest Center Radiological Emergency Response Plan for incidents at the Limerick Generating Station.

Two (2) of these copies are for the County, one (1) copy for the Pennsylvania Emergency Management Agency and one (1) copy for Philadelphia Electric Company.

This plan represents the response actions which River Crest Center will take for incidents at the Limerick Generating Station, and should be considered a final plan. Please feel free to forward this plan for state or federal review.

All change pages will be provided to you as they are made. Please call me if you have any questions.

Sincerely,

Nancy Thaler

Nancy Thaler
Director
River Crest Center

NT:pg

✓ cc: D. Dunn
Energy Consultants

PHOENIXVILLE AREA SCHOOL DISTRICT

DR. ROBERT B. MURRAY, SUPERINTENDENT

August 29, 1984

Mr. Robert W. Kane
P.O. Box 71
Coatesville, PA 19320

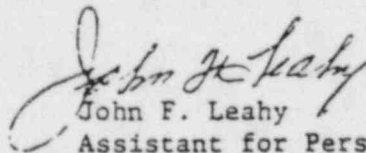
Dear Mr. Kane:

As per our conversation at yesterday's meeting, we will need the following pieces of emergency equipment as mentioned in the Phoenixville Area School District Radiological Emergency Response Plan.

5 for the building principals
1 for the maintenance supervisor
1 for the superintendent
1 for the coordinator
1 for the bus depot
--
9 - Total pieces of equipment

If there are any questions concerning the above, please contact me.

Sincerely,


John F. Leahy
Assistant for Personnel

JFL:lsg

cc: Dr. Robert Murray
Mr. Henry Tamanini



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September 10, 1984

Dr. Ray E. Feick
Superintendent
Pottstown School District
Beech & Penn Streets
Pottstown, PA 19464

Dear Dr. Feick:

Transmitted separately to Mr. Bush were thirty-eight (38) copies of Draft #5, Pottstown School District Radiological Emergency Response Plan (RERP) for Incidents at the Limerick Generating Station.

During Administrative and Board review, I ask that you pay particular attention to those areas of the plan noted with an asterisk (*). These areas reflect changes suggested at our review meetings and indicate data or information supplied by your District. Please note that some minimal resource information still must be included. Please feel free to indicate any further revisions you might require and to add the data specific to school year 1984-85.

Mr. Lin Bigelow, OEP, Henry Tamanini, Energy Consultants, and I will be available on September 14 to discuss the RERP and the information needed to complete the planning process with the Board. After that meeting, we can determine any further review meetings the District may require and discuss the timetable for RERP review/approval.

Should you have any immediate questions following receipt of this correspondence, please do not hesitate to call me.

Thank you for your continued cooperation.

Sincerely,

John H. Cunnington
Emergency Planning
Specialist

JHC:jr
cc. James R. Bush
Montgomery County OEP



ENERGY CONSULTANTS

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(717) 236-0031

September 12, 1984

Dr. Richard I. Bauer
Assistant Superintendent
Great Valley School District
Charlestown Road
DeVault, PA 19432

Dear Dr. Bauer:

Thank you for the opportunity to meet with you regarding the Great Valley draft plan for incidents at the Limerick Generating Station.

With regard to our discussion of training, Energy Consultants has communicated your request to Philadelphia Electric. You will be contacted by a representative of PECO regarding your request.

I will remain in contact, and I look forward to receiving your district organizational chart.

If you have any questions, please contact me.

Sincerely,

Henry C. Tamanini
Henry C. Tamanini

HCT:jr
cc. R. Kane, PECO