



OSWEGO COUNTY
OFFICE OF EMERGENCY PREPAREDNESS

(315) 598-0871

200 NORTH 2ND STREET FULTON, NEW YORK 13069

GEORGE W. BROWER
Director

30 October 1979

Mr. Brian K. Grimes
Acting Assistant Director for
Systems Engineering
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
Washington, DC 20555

Subject: Review of "Basis for Emergency Action Levels for
Nuclear Power Facilities" (Draft NUREG 0610).

Dear Mr. Grimes:

In response to the Office of State Programs request for members of the IOAC to review and comment on Draft NUREG 0610, the following comments are offered:

General Comments: The previously established Emergency Action Levels in Regulatory Guide 1.101 appear quite inadequate in light of recent events. The new Emergency Action Levels established and their associated examples of initiating conditions are a vast improvement. I feel that much of the ambiguity associated with notification has been removed; the decision "window" has been narrowed. The examples cited (initiating condition time) as well as the new sense of purpose (i.e., the rationale given) add in this case. The listings of actions to be taken by the licensee, the state and local officials are very helpful.

Specific Comments: The release potentials given for each classification should be expanded for off-site agency guidance. List worst case exposure rates for unfavorable meteorological dispersion conditions at the exclusion radius and emergency planning zone for the maximum release limit of each emergency action level. This would allow a means of quick reference on the bounds of potential danger.

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Mr. Brian K. Grimes

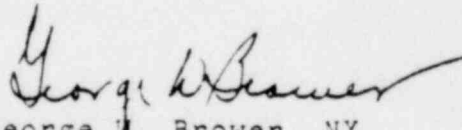
30 October 1979

Under "Licensee Actions" column for all the Emergency Action Level classes the word promptly is used in reference to notify state and local authorities. Prompt is defined as meaning "performed readily or immediately". Our experience with notification locally of unusual events has been anything but prompt. Possibly the word "immediately" could replace "promptly" to "fine-tune" the interpretation of the clause.

I also feel notification should be to both state AND local authorities for all classes. If this might tie-up an additional person in the control room then maybe an improved notification system, such as a quick call automatic call system, is in order or a tie-in to the NRC red phone could be adapted. This might also simplify notification, especially on the 2nd and 3rd shift.

Also under the "Licensee Actions" column the verbal summary closeout followed by a written summary within a specified time is a strong attribute to this document. I do feel, however, that BOTH state and local authorities should be specified as receiving this. I feel this will exercise communications, strengthen rapport and in doing so acknowledge the important role that local off-site authorities play.

For Site and General Emergency Classes under "State and Local Off-Site Authority Actions" column the distances mentioned to recommend protective actions doesn't seem to coincide with the implications of the planning basis set forth in NUREG-0396. I would be interested in knowing what parameters were used in arriving at these initial distances.


George W. Brower, NY
IOAC Member

GWB:mw

cc: J. Montgomery, CO
IOAC Chairman

DOCKET NUMBER
PROPOSED RULE PR - Misc. Nureg 0610
(44FR 55446)

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B. Grimes
DSE
Ch. Hamilton

18 October, 1979

Secretary of the Commission
US Nuclear Regulatory Commission
Washington DC 20555
Attention: Docketing and Service Branch

CITIZENS
FOR
A
BETTER
ENVIRONMENT

Dear Sir:

The following are CBE's comments on the September, 1979, draft of NUREG 0610, Draft Emergency Action Level Guidelines for Nuclear Power Plants:

1. Sheltering appears to be growing in acceptance as a response to fast developing types of accidents, e.g. page 1 notes that the immediate action for a general emergency is sheltering, and page 13 only advises 'considering' a precautionary evacuation. It is unlikely that this option will work unless the public are told a lot more about radiation protection prior to an accident, and unless a much better system exists to keep the public informed as to what they should do next. Otherwise sheltering is a do-nothing which will only encourage chaotic voluntary evacuation.
2. In any accident, knowledge of exactly what is going on in the depths of the reactor will be sketchy at best. Thus a criterion such as 'rapid gross failure of one steam generator tube with loss of offsite power' as on page 7, is inappropriate since it is immeasurable at the best of times. The recent incident at the Prairie Island reactor is a good example of this difficulty.
3. The 'Expected Frequency' item is useful but totally discouraging. If a general emergency will occur only once in 5000 years, why bother about it?



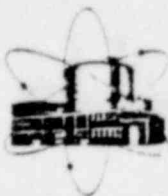
This completes CBE's comments on this topic.

Yours sincerely,

Peter Cleary
Peter Cleary
Staff Physicist.

duple PDR
IP
7912110224

Acknowledged by card. 11/16 *f*



UNIVERSITY OF VIRGINIA
SCHOOL OF ENGINEERING AND APPLIED SCIENCE
CHARLOTTESVILLE, 22901

DSE
B. G. G. G.

DEPARTMENT OF NUCLEAR ENGINEERING AND ENGINEERING PHYSICS
REACTOR FACILITY

TELEPHONE: 804-924-7138

October 15, 1979

Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attn: Drcketing and Service Branch

Re: NUREG-0610
Emergency Action Level Guidelines

Dear Sir:

We are concerned that licensee action to "promptly inform State and/or local offsite authorities of nature of unusual conditions as soon as is discovered" will have an adverse effect on the safety and welfare of the public. Specifically such notification at frequent intervals will lead to unreasoned fear by the public, and possible panic, in cases in which such notification may not be called for. Further, frequent notification of local authorities for non-serious events can lead to a state in which the authorities will not respond in the event of a serious incident. The expected frequency is once or twice per year per unit, but we believe the frequency may be much greater than this. For instance, the example initiating conditions are poorly worded and could lead to numerous reportable events which have no consequence to the public:

- Item 4 - The word abnormal is not defined and can be defined very loosely.
- Item 6 - Does this include valve failure during testing? Why should a valve failure cause alarm if there is a backup valve which operates?
- Item 7 - I suspect that offsite power may be lost frequently in adverse weather conditions.
- Item 10 - Does this mean a fire anywhere onsite? Even trash basket fire?
- Item 12 - A security threat can be initiated by anyone who wishes to call in a bomb threat. Would this require immediate notification?
- Item 14-a - Unusual aircraft activity not defined.
- Item 14-e - Turbine failure - Does this include every turbine trip?
- Item 17 - "Rapid" is not defined.

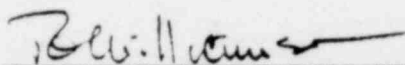
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Letter to Secretary of the Commission
October 15, 1979
Page 2


In summary, we believe that the items listed as example initiating events for an unusual event are not serious enough to require notification of local authorities and, in fact, will have adverse effects on the health and safety of the public. We recommend the following actions:

1. Delete notification of Local/State officials for "unusual events". If this is not done at least revise the example list to be more realistic, e.g. a radiological release in excess of Technical Specifications limits.
2. Eliminate the requirement for "Alert" to update plant status at "least every 15 minutes". Note that even the worse classes don't specify a time interval between reports.

Yours truly,



T. G. Williamson, Chairman
Dept. of Nuclear Engineering
and Engineering Physics



B. L. Shriver, Director
Reactor Facility

TGW
BLS:ph

FROM: WILLIAM M. BJORENSEN, DIRECTOR
LINN COUNTY/MUNICIPAL CIVIL DEFENSE
CITY HALL CIVIL DEFENSE CENTER
CEDAR RAPIDS, IOWA 52401



PHONE
363-2671 Day or Night

DATE- October 11, 1979

Brian K. Grimes
Acting Assistant Director for Systems Engineering
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
Washington, D. C. 20555

COMMENTS on NRC - NRR INTERIM DOCUMENT 9-17-79

Brian, I'll try to combine my own comments on the "Basis for Emergency Action Levels for Nuclear Power Facilities" along with those of several of my associates with various relationships to technologies of the subject.

You are off to a good start but a final version must include a meaning guide for acronyms used. I know what they stand for but most others in the response teams would be puzzled.

We have learned from our own nuclear plant drills that statements such as "releases up to 1000 ci of I-131 equivalent or up to 10^6 ci of Xe 133 equivalent" should be interpreted by the in-plant contact before being transmitted to the response agencies, especially if the message is to be relayed. Since a drill earlier this year we have agreed to a changed staffing pattern which will always include utilizing a science language interpreter in our Civil Defense/Sheriff Department connected facility. The solution I'd favor is that previously agreed upon jargon would convey the information from the plant to outside.

Unusual Event item # 14. (a) referring to a crashed aircraft or a suspicious one above the facility probably should include information on observing for aircraft numbers and description plus how to report it for identification.

Actions to place animals on stored feed should also include consideration for confining them and evacuating later if needed. Does Site Emergency item # 13 "Imminent loss of physical control of the Plant" mean actions of disidents have created overwhelming situations which are out of control of the utility? If it does, I regard the threat from covert acts of long planned sabotage from within, to be a serious possibility.

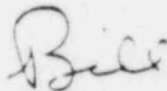
Nuclear plants often become aware of malfunctioning safety equipment as a result of surveillance testing of functions to reveal abnormalities. We suggest there be more study of the criteria for whether or not a situation justifies reporting to outside agencies. During normal operation of the plant there might be various equipment malfunctions

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which could be corrected while redundant systems provide adequate level of safety. When any established safety parameters are approaching unsafe levels, that's a different situation. Rational guidelines on what needs to be reported and what does not, needs more discussion from the several viewpoints. Offsite agencies should be notified promptly when safety levels are threatened or exceeded but with pre-agreed evaluations used in the decision.

This is similar to the judgement during threatening storm conditions as to whether or not to use television, radio and sirens to declare a signal for all people to seek shelter. If the threat is windstorm, hail, squall, roll clouds or blizzard, we do not. However, for confirmed funnel cloud or tornado, yes, we do.

We doubt if there needs to be four classes of conditions. For our purposes Site Emergency can be eliminated so that General Emergency with descriptive narration from the plant helping us to determine the degree of action needed.



William M. Bjorenson

cc: Jim Montgomery

OFFICE OF EMERGENCY SERVICES

POST OFFICE BOX 9577
SACRAMENTO, CALIFORNIA 95823
(916) 421-4990



October 10, 1979

Brian K. Grimes
Acting Assistant Director
for Systems Engineering
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Grimes:

Enclosed are our comments on the NRC-NRR interim document "Basis for Emergency Action Levels for Nuclear Power Facilities."

Although the cover letter for this document was dated September 17, it was not received at our office until September 27. Due to travel I was unable to review it and have my comments to you by October 5. Nevertheless, I trust my comments will be of assistance.

If you have any questions, please contact me.

Sincerely,

John J. Kearns
John J. Kearns
Assistant Director

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STATE OF CALIFORNIA
OFFICE OF EMERGENCY SERVICES

Comments on NRC-NRR Interim Document

"Basis for Emergency Action Level' for Nuclear Power Facilities"

A. CLASS

The need for a nationwide standard accident classification system has existed for some time and we are pleased action is finally being taken in this regard. However, in addition to the use of "Notification of Unusual Event", "Alert", etc, we recommend a letter or number designation for each class. That is, the "Notification of Unusual Event" could be a Class A or Class 1 accident; "Alert" could be a Class B or Class 2 accident; etc. A system using reverse numbering or lettering could also be considered.

To ensure this system is employed nationwide, it should be incorporated as an essential element of the NRC Guide and Checklist, NUREG 75/111. In addition, we recommend a standard reporting form for use by the licensee and off-site authorities.

B. CLASS DESCRIPTION

No comment - these are definitive.

C. PURPOSE

We do not feel the purpose of the emergency action levels for nuclear power facilities changes from class to class. The purpose of all these levels is simply to:

1. ensure pre-determined protective actions are initiated by the licensee and off-site authorities,
2. ensure additional measures are initiated as indicated by event releases or potential releases,
3. provide continuous assessment of information between the licensee and off-site authorities, and
4. provide current-status information to the licensee, off-site authorities and the public.

As presently written, the purpose of each class is more or less a restatement of actions taken by the licensee and off-site authorities.

Also, the purpose of emergency action levels is not or should not be related to unscheduled tests of response center activation. These tests have occurred without this classification system and will continue whether or not this system is eventually adopted by the NRC.

D. RELEASE POTENTIAL

This could be a little more meaningful if in addition to the present description, it could be stated in terms of dose or dose rates and related to the established Protective Action Guides (PAG's). For example:

1. Class A - Notification of Unusual Event
Release Potential - no change from present description
2. Class B - Alert
Release Potential - in addition to present description, "off-site doses not expected to exceed 1 Rem wholebody or 5 Rem Thyroid."
3. Class C - Site Emergency
Release Potential - in addition to present description, "off-site doses may exceed 1 Rem wholebody or 5 Rem thyroid."
4. Class D - General Emergency
Release Potential - in addition to present description. "off-site doses will exceed lower limit PAG of 1 Rem wholebody or 5 Rem thyroid and may exceed upper limit of PAG, 5 Rem wholebody or 25 Rem thyroid."

It would be more definitive to off-site authorities if a potential fence-line dose rate could also be established for each of the above classes.

E. EXPECTED FREQUENCY

✓
In view of the criticism of the probabilities expressed in the Rasmussen Reactor Safety Study; the recent events at Three Mile Island, Prairie Island, and North Anna nuclear facilities; and the total lack of credibility associated with any expression of expected frequency, we question why this is even a part of the emergency action levels for the licensee and off-site authorities. It doesn't

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add anything to the system, nor does it influence or change outlined actions by either the licensee or off-site authorities.

We recommend the expected frequency classification be deleted.

F. LICENSEE ACTIONS

1. For all classes of emergencies and not just the "Site Emergency" and "General Emergency" the licensee should -
 "Provide a dedicated individual for plant status updates to off-site authorities and periodic press briefings."

NOTE: Under the Alert class, periodic plant status updates are to be provided at least every 15 minutes which would almost require a dedicated individual. Also, no frequency of updates listed for the Site Emergency or General Emergency classes.

✓ Are these to be at least every 15 minutes or what?

2. There is some confusion regarding the "near-site emergency operations center (EOC). Both the licensee and off-site authorities are directed to "activate the near-site EOC". Are these separate EOC's, a joint EOC or what?
3. It is assumed the written summary following the close of an incident will be provided to the NRC. Will a copy be provided to off-site authorities and if so, shouldn't it be so stated under "license actions?" Also, we question the need or practicality for providing the written summary within the indicated time frame. It would seem ample if a written summary were provided for (1) Notification of Unusual Event within 72 hours, (2) Alert within 24 hours, and (3) Site Emergency and Emergency within 8 hours.

G. STATE AND/OR LOCAL OFF-SITE AUTHORITY ACTIONS

1. We question why evacuation has been eliminated as a countermeasure in the General Emergency class. As I read the description of this class, a major accident is in process or is imminent. It seems ✓ to us evacuation is an option that must be considered and to imply we shouldn't use it leaves a void in protecting the public health and safety. In view of the information contained in the appendices to NUREG 0396, one might consider evacuation out to 5 miles and sheltering between 5 and 10 miles. Furthermore, evacuation is recommended under Initiating Conditions - General Emergency. This appears contradictory to earlier statements.

2. Again, referencing NUREG 0396, why aren't we considering placing milk animals within 50 miles on stored feed?
3. The use of potassium iodide has been ignored as an action that could be taken by off-site authorities. Distribution of this blocking agent to emergency workers should be considered as well as to segments of the general population.
4. Under the Notification of Unusual Event and the Alert classes, off-site authorities "Provide fire or security assistance if requested." This should be changed to "Provide any assistance requested" as is indicated under the Site Emergency and General Emergency classes.
5. Under the Site Emergency and General Emergency classes press briefings are provided. The Alert class will also require briefings to the press by off-site authorities and even perhaps under the Notification of Unusual Event classification.

H. EXAMPLE INITIATING CONDITIONS

We don't feel we have the expertise to evaluate these conditions and we would rely on the licensee for their evaluation and comments. However, several things did come to our attention:

1. Again, the statements regarding evacuation in the General Emergency class contradict earlier statements that "the immediate action for this class is sheltering (staying inside) rather than evacuation. . . ."
2. The use of the term "large amounts of fission products" should be defined in terms of curies, curies per cubic meter, or dose rate.
3. The effluent monitors detecting levels corresponding to 1 Rem/hr wholebody or 5 Rem/hr thyroid at the site boundary appear too high if effective action is going to be taken.
4. We doubt anyone on-site could determine the magnitude of an earthquake, yet any earthquake is cause for Notification of Unusual Event, an earthquake greater than OBE levels is an Alert class, and an earthquake greater than SSE levels is a Site Emergency.



STATE OF
WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF EMERGENCY SERVICES

4220 E. Martin Way, Olympia, Washington 98504

206/753-5255

Betty J. McClelland, Director

October 4, 1979

Brian K. Grimes
Acting Assistant Director for
Systems Engineering
Office of Nuclear Reactor Regulations
Nuclear Regulatory Commission
Washington D.C. 20555

Dear Mr. Grimes:

I have reviewed your interim document, "Basis for Emergency Action Levels for Nuclear Power Facilities." I feel that this is an improvement over the multiple of existing action level procedures that have existed in the past.

I like the way these are put together, with the class of incident, the action for the licensee and the off-site authority actions. I feel that these instructions are clear and leave little to chance.

I would appreciate knowing when this document is implemented, so that we may contact our facilities and discuss these instructions with our respective duty officers and other agencies that we advise off-site.

Thank you for sending this document to this agency for comment.

Sincerely,

Betty J. McClelland
Director

BJM:sc

cc: James L. Montgomery
Interorganizational
Advisory Committee

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Kitsap County
Department of Emergency Services

614 DIVISION ST

KITSAP COUNTY COURTHOUSE • PORT ORCHARD, WASHINGTON 98366 • TELEPHONE (206) 876-8077

2 October 1979

Mr. Brian Grimes
Office of State Programs
Nuclear Regulatory Commission
Washington D. C. 20555

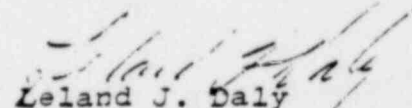
Dear Mr. Grimes:

Reference: "Basis for Emergency Action Levels
For Nuclear Power Facilities."

I received a copy of the above document on Monday October 1st. A quick reading indicates that it will be a useful tool in setting up a pre-arranged notification and information exchange system between my office and Code 105 of the Puget Sound Naval Shipyard at Bremerton. At present we are using a coded message to test our inter-communications on a scheduled basis. This document may well serve as an extension of our existing system.

I hope to have more studied comments by our meeting in Denver later this month.

Sincerely


Leland J. Daly
Director

JLD:mpd
cc: Jim Montgomery

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7911190029 *FDR*
IP

STATE OF NEW YORK
DEPARTMENT OF HEALTH  OFFICE OF PUBLIC HEALTH

TOWER BUILDING • THE GOVERNOR NELSON A. ROCKEFELLER EMPIRE STATE PLAZA • ALBANY, N.Y. 12237

DAVID AXELROD, M.D.
Commissioner

GLENN E. HAUGHIE, M.D.
Acting Director

October 1, 1979

Mr. Brian K. Grimes
Acting Assistant Director
for Systems Engineering
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Brian:

Doc Collins asked me to comment on the draft NRC Interim Document
"Basis for Emergency Action Levels for Nuclear Power Facilities".

1. A document of this type is needed. This represents a good approach in providing accident classifications which should be adopted by all emergency planning agencies. If we call an accident a "site" or a "general emergency", planners should understand the potential consequences.
2. You should finalize this as quickly as possible. Utilities, State and local agencies should be given uniform guidance. Plans are presently being drafted based upon the classes in Reg. Guide 1.101. Let's standardize the classification.
3. The document appears to indicate that only the licensee and State and/or local authorities will have responsibilities in the event of an accident. The specific role of the NRC and other Federal authorities should be identified.
4. In lieu of referring to the State and local agencies in a generic manner, I suggest that reference be made to the notification, etc., of the State and local agencies identified in the radiation emergency response plan. For example, multiple State and local agencies could be impacted.
5. Based upon the expected frequency of accidents as indicated in the document, the emergency planning agencies should consider detailed planning for the "notification of Unusual Event" and "Alert". The "Site" Emergency "occurring once in a hundred to once in 5,000 years and the "General Emergency" once in 5,000 to once in 100,000 years are highly unlikely. Therefore, substantive planning efforts in terms of manpower and equipment would be difficult to justify. For example, is there justification in developing a comprehensive siren network to notify the population within 10 miles of the site?

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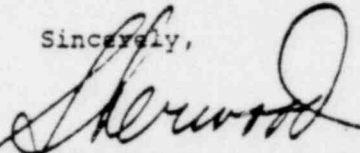
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October 1, 1979

6. The class description for "General Emergency" is predicated upon physical conditions in the plant and not releases. The examples for a "General Emergency" indicate that effluent monitors detected levels of activity off site in the rem range. The class description should cover the examples.
7. The release potential under "General Emergency" states releases of more than 1,000 curies of I-131 equivalent. What is the equivalent of 1,000 curies of I-131? I suggest reference to releases of more than 1,000 curies of halogens more than 10^0 curies of noble gases and (10^3 ?) curies of other fission products.
8. The recommended actions under the column entitled "State and/or Local Offsite Authority Actions" are too specific and might be adopted as a rigid guide. Suggest that the heading be as follows, "Actions to be Considered by State and/or Local Offsite Authorities".

I appreciate the opportunity to provide these comments.

Sincerely,



Sherwood Davies, M.P.H., P.E.
Director
Bureau of Radiological Health

d=

cc: J. Montgomery
H. Collins

MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
FOOD AND DRUG ADMINISTRATION

TO : Brian K. Grimes
Acting Assistant Director for Systems Engineering
Office of Nuclear Reactor Regulation, NRC

DATE: September 27, 1979

FROM : Assistant Director for Scientific Affairs
Bureau of Radiological Health, FDA

SUBJECT: Comments on "Basis for Emergency Action Levels for Nuclear Power
Facilities"

For clarity, and in order to relate the Emergency Action Levels to other Federal Guidance, I strongly recommend that a description be used in the definition of each Emergency Action Level that states anticipated future doses to the whole body and thyroid gland. The definition of Protective Action Guides refers directly to future radiation doses and limits for PAG's are usually stated in terms of dose equivalent or dose equivalent commitment. This is not done in the subject document. I note that dosimetric information is mentioned in the descriptive scenario's, but I believe that its inclusion under a separate category, perhaps entitled "Anticipated Radiation Doses," is necessary.

In the scenario for a General Emergency the anticipated doses are at the lower limit of EPA's draft PAG guidance (EPA-520/1-75-001) if persons are exposed to the anticipated radiation levels for one hour. However, protection (i.e., evacuation) is not recommended unless the anticipated doses are ten times these levels (twice EPA's upper PAG guidance). Furthermore, evacuation is recommended out to distances of 2 to 5 miles. The NRC/EPA task force on the Planning Basis for The Development of State and Local Government Radiological Emergency Response Plans (NUREG-0396) recommends planning for evacuation out to 10 miles. These are inconsistencies between the subject document and presently available PAG's and planning documents.

Bernie

Bernard Shleien, Pharm.D.

cc:
Harold Collins, NRC
Floyd Galpin, EPA

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IP
7910310230*



KM
J

CHARLES CENTER • P.O. BOX 1475 • BALTIMORE, MARYLAND 21203

ADVISED
REACTOR

December 5, 1979

ELECTRIC ENGINEERING
DEPARTMENT

DEC 12 1979

Secretary of the Commission
U. S. Nuclear Regulatory Commission^{AM}
Washington, D. C. 20555
7181911111-1-10415.0

Attention: Docketing and Service Branch

Gentlemen:

In reference to NUREG-0610, "Draft Emergency Action Level Guidelines for Nuclear Power Plants", Baltimore Gas and Electric Company has attempted to provide meaningful comments which could help to mold the draft guidelines into a workable form, but we must report that our efforts have ended in frustration. The reason for this, simply stated, is that the draft guidelines are a gross example of total overkill and total overreaction.

To be more specific, we are concerned about the proposed scheme for requiring extensive communication between the nuclear plant and state/local agencies for essentially every so-called unusual event. The potential here for a "cry wolf" situation is very real. We appreciate the need to maintain well-oiled machinery for effective communications in bona fide emergency situations. However, to burden various agencies with notifications of a hurricane when everybody already knows one's coming or to report every off-normal coolant temperature or minor effluent technical specification infraction is not in the best interest of public safety.

Another important point is that similar events are listed as initiating events for notification on different action levels. For instance, again, a hurricane requires an alert but also requires only notification. Similarly, the draft guidelines for a particular class include, in some cases, extremely important events such as a severe cladding loss and comparatively unimportant events such as security breaches. We need to be sure that only important events result in prompt effective action on the public level.

Other examples (and there are too many to list) which will give you an idea of the problems with NUREG-0610 as written:

1. Notification of security threat or attempted entry. Comment: What if an NRC inspector is merely testing our procedures? Do we notify state/local agencies?
2. Notification of fire longer than 10 minutes. Comment: Where is the fire? When is it officially "out"?

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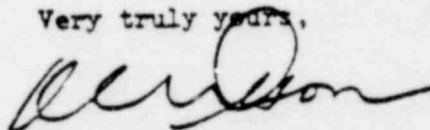
3. Notification of loss of containment integrity which results in a shutdown by technical specifications. Comment: Why notify the public when the Technical Specifications have already caused the proper, prudent action to be taken?

We hope you understand our concern over the enforcement of guidelines such as those presently in NUREG-0610. We are all in favor of taking the maximum action possible to protect the public health and safety in the case of a bona fide emergency such as the melting of some part of the fuel. But let's not overreact just because we have discovered inefficiencies in emergency preparedness plans or because we have discovered that humans can't always be counted on to make the proper decision when forced to take action without adequate guidance.

We all need to slow down and take a probing, thoughtful look at emergency planning. This is not the place for helter skelter arm waving or shallow, thoughtless guidelines. We should all use the TMI-2 incident as a learning device, as a point of reference from which to make improvements. Not all changes are improvements, and not all steps taken are steps taken in the right direction.

We apologize for the tardiness of these comments but urge that they be factored into whatever revisions you make to the "guidelines" of NUREG-0610.

Very truly yours,



R. C. L. Olson
Senior Engineer

RCLO/smn

cc: J. A. Biddison, Esquire
G. F. Trowbridge, Esquire
Messrs. E. L. Conner, Jr., NRC
J. M. Hendrie, NRC
M. W. Carbon, ACRS ✓
D. G. Eisenhut, NRC

K

From: SECY-79-216A (April 2, 1979), U. S. NRC.

IV. FUTURE RESEARCH NEEDS OF THE NUCLEAR REGULATORY COMMISSION

A. Introduction

The uncertainty regarding the magnitude of the health risk from low-level radiation requires a conservative approach for controlling radiation exposures. Current radiation standards are based upon an assumed linear, dose-rate-independent, non-threshold dose-effect relationship. This assumption presumes that there is no level, except zero dose, below which there is no risk (non-threshold theory), that chronic health risks resulting from high doses can be extrapolated in direct proportion to the magnitude of the dose to estimate the effects of low doses (linearity), and that the dose response is not affected by the rate at which the dose is delivered (dose-rate independence). Although these assumptions are generally regarded as conservative, a few recent analyses of data obtained from studies of human populations exposed to low doses have produced controversial results which dispute the validity of the linear extrapolation and suggest that the risk per unit dose at low levels may be even higher than that obtained using the linear model. On the other hand, animal studies suggest exactly the opposite; that for low-LET* radiation (e.g., beta particles, gamma radiation, and X-rays), the risk from low doses delivered at low dose rates is considerably less than predicted by linear extrapolations from high dose and high dose rates.

* Low-LET radiation is radiation which has a low Linear Energy Transfer and deposits small amounts of energy per unit pathlength. High-LET radiation deposits considerable energy per unit distance of material traversed.

B. General Needs

1. Epidemiological Studies to Confirm Health Risks from Low-Level Radiation Exposure

Because of the uncertainty of the validity of extrapolated values, there is a need for further epidemiological studies of human populations which have been exposed to low-level radiation. The joint EPA/NRC study to be performed to comply with the Congressional mandate in Public Law 95-601 is designed to evaluate the feasibility of conducting and designing future studies to meet this need. It is expected that the planning and feasibility study will identify which populations of exposed individuals, if any, are suitable for further investigation of the effect of low-level ionizing radiation. This joint EPA/NRC effort, together with on-going efforts by the Departments of Defense, Energy, and Health, Education, and Welfare, may provide a better basis for providing upper-bound estimates for the health risks of low-level radiation. If these studies confirm that the risks of somatic injury from low-level radiation are higher than currently believed, additional long-term epidemiological studies may be required to evaluate both the somatic injury to individuals exposed to radiation and the magnitude of genetic damage to their offspring. With respect to genetic effects, additional information is required on the occurrence of radiation-induced recessive mutations and how these mutations are expressed in terms of ill health or an increased susceptibility to disease.

2. Continued Animal Studies of Mechanisms of Radiation Injury

Animal studies* provide evidence of a quadratic dose-effect relationship of the form: $R = \alpha D + \beta D^2$ which indicates, for low-LET** radiation, that linear extrapolations of the effects observed at high doses and high dose rates would overestimate the effects for low doses and low dose rates by factors between 2 and 10. Recent experimental evidence for high-LET** radiation (e.g., neutrons, protons, and alpha particles) indicates that this quadratic response is not observed for these radiations. Continued animal studies are required to assist in confirming the conservatism believed to be inherent in assuming a linear extrapolation model, and to better define the mechanisms of radiation injury and repair processes.

3. Studies to Determine Factors which may Modify Radiation Injury

Information is needed on the effect upon the dose-effect relationships of such factors as exposure pathway, sex, age, and health condition and genetic factors such as possible inherited susceptibility to disease or hypersensitivity. Such information could help identify groups within the population that require special consideration for radiation protection purposes.

* These studies are described in Annex G, Section ID; Annex H, Section IIF; and Annex I, Section VD of the United Nations Scientific Committee on the Effects of Atomic Radiation 1977 Report, Sources and Effects of Ionizing Radiation and in a forthcoming report of Scientific Committee 40 of the National Council on Radiation Protection and Measurements.

**These terms are defined in the footnote on page 44.

Improved information on the levels of individual and population exposure to all toxic materials is required to assess the magnitude of the total health risk to exposed populations. Expanded animal research efforts are also needed to examine possible interactions between exposure to other toxic agents and radiation exposure to define how dose-response relationships may be affected by these other exposures. Similar studies on the effect on radiation sensitivity of humans and animals of conditions caused by pathogens and pathogenic organisms should also be expanded.

4. Studies of Biological Indicators of Radiation Damage

Continued investigations are needed of possible biological indicators of radiation damage such as identification of chromosome aberrations in peripheral lymphocytes (blood cells). Additional work is needed, particularly in the low-dose area, to determine whether these changes could provide biological indications of future health consequences.

C. Specific Needs of the Nuclear Regulatory Commission

In addition to health research studies needed to confirm the adequacy of existing radiation protection standards and radiation health effects estimates, the Commission will require additional research and technical assistance studies to improve its evaluations of the health impacts of licensed operations. Although future needs are dependent to some extent upon the results obtained from on-going

studies, the Commission staff has identified the following areas where additional information is required:

1. Uranium Milling Operations

Preparation of a Generic Environmental Impact Statement on Uranium Milling has resulted in the identification of additional information needs required to update and supplement existing studies to better define the impacts of this class of operations:

Improved information will be needed on the metabolism and retention of the various chemical compounds of uranium which are generated in the milling, conversion, and fuel fabrication stages of the fuel cycle.

Further analysis of the data obtained from field measurements of emissions of radon and particulates from uranium mill tailings piles will be required in order to develop general models for predicting these emission rates.

Extensive information on the costs and effectiveness of various methods to stabilize and reclaim tailings piles and to limit releases of radon and particulates will be required to support NRC's expanded responsibilities under the Uranium Mill Tailings Radiation Control Act of 1978, Public Law 95-604.

A review of bioassay data from operating uranium mills, conversion and, fuel fabrication facilities should be performed to determine the need for additional requirements for worker protection.

2. Radioactive Waste Management

Extensive on-going NRC efforts to develop licensing criteria and to review procedures for high-level waste disposal facilities and for upgrading site selection requirements for low-level waste burial sites have identified needs for additional research in the following areas:

There is a need for development of improved models for predicting ground-water transport of radioactive materials.

Additional studies are needed of the mechanisms and parameters for estimating the retention characteristics of various soil types.

Additional studies are required of the interactions between high-level waste solidification matrices and the minerals that may exist in underground repositories.

3. Long-Term Impacts of Releases of Radioactive Materials into the Environment

Further studies are needed to improve environmental transport models for predicting the fate of long-lived radionuclides released into the environment. In particular, expanded research on the geochemical cycling of stable elements would be useful for estimating the global movement of long-lived radionuclides.

4. Occupational Exposure to Neutrons

Improved information on the neutron exposure received in nuclear power reactors is needed to assess the health implications of neutron exposure.

Experimental animal studies are required to confirm the biological effectiveness of neutron exposure.

5. Radiation Doses from Medical Devices and Radioisotope Applications

Further studies are needed to better document doses received by medical personnel (technicians, nurses, and physicians), patients, and patient families resulting from medical radiation applications of NRC-licensed materials and on techniques for reducing these exposures.

These needs will be addressed in future NRC research plans beyond FY 1981.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
of the University of Heidelberg, Germany
6900 Heidelberg
Im Neuenheimer Feld 360

RADIOECOLOGICAL ASSESSMENT OF THE WYHL NUCLEAR POWER PLANT

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEP 19 1979

ADVISORY COMMITTEE ON
REACTOR SAFEGUARDS U.S. NRC

OCT 3 1979

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The USNRC Office of Nuclear Reactor Regulation has developed draft Emergency Action Level Guidelines to improve the emergency preparedness capabilities around operating nuclear power plants. The enclosed draft guidelines for interim use, published as NUREG-0610, establishes four classes of Emergency Action Levels replacing the classes in Regulatory Guide 1.101. The new classes are Notification of Unusual Event, Alert, Site Emergency, and General Emergency.

Public comments on these draft guidelines are solicited. All comments sent to:

Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, DC 20555
Attention: Docketing and Service Branch

and received by December 1, 1979, will be considered by the Commission.

Sincerely,

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosure:
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U.S. NUCLEAR REGULATORY COMMISSION
DRAFT EMERGENCY ACTION LEVEL GUIDELINES
FOR NUCLEAR POWER PLANTS

September 1979

OFFICE OF NUCLEAR REACTOR REGULATION
U.S. NUCLEAR REGULATORY COMMISSION

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NUCLEAR REGULATORY COMMISSION

[10 CFR Part 50 and
10 CFR Part 50, Appendix E]

EMERGENCY PLANNING

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Proposed Rule Changes

SUMMARY: The Nuclear Regulatory Commission is proposing to amend its regulations in order to provide an interim upgrade of NRC emergency planning regulations as well as to specifically:

- a. Require, that an applicant's emergency plans, including State and local governmental emergency response plans, be submitted to and concurred in by the NRC as a condition of operating license issuance. Additionally:
1. An operating plant may be required to cease operation or reduce power levels if a State or local emergency response plan has not received NRC concurrence within 180 days of the effective date of the final amendments.
 2. An operating plant may be required to cease operation or reduce power levels if a State or local emergency response plan does not warrant continued NRC concurrence and the State or locality does not correct the deficiencies within 4 months of notification of NRC concurrence withdrawal.

b.

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c. Require that applicants' and licensees' detailed emergency planning implementing procedures be submitted for NRC review.

DATES: Comments should be submitted on or before (45 days after publication).

ADDRESSES: Interested persons are invited to submit written comments and suggestions on the proposed rule changes and/or the supporting value/impact analysis to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch. Single copies of the value/impact analysis may be obtained on request from Mr. I. C. Roberts, 301-443-5985. Copies of the value/impact analysis and of comments received by the Commission may be examined in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C.

FOR FURTHER INFORMATION CONTACT: Mr. I. C. Roberts, Assistant Director for Siting Standards, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 (phone: 301-443-5981)

SUPPLEMENTARY INFORMATION: By memorandum dated July 31, 1979, the Commission requested that the NRC staff undertake expedited rulemaking on the subject of State and local emergency response plans and those of licensees. The rulemaking described in this notice responds to that request. Time constraints have precluded the careful review and consideration normally given to proposed rulemaking actions of comparable significance. Consequently, considerations related to the workability of the proposed rule changes may have been overlooked and significant impacts to NRC, applicants, licensees, and State and local governments may not have been