



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

ENCLOSURE 2

AUG 11 1989

NOTE TO: Hugh Thompson
FROM: Themis Speis
SUBJECT: NRC POSITION ON KI - DPO - MR. PETER CRANE

As indicated in the enclosed meeting notes, the DPO panel will be compiling some additional information regarding this issue and will revisit the staff's earlier cost-benefit analysis. With Mr. Crane's agreement, the group will meet again informally in September to discuss results of this effort and to consider how to proceed further.



Themis Speis

Enclosure:
Meeting Notes

cc: w/enclosure
P. Crane
F. Congel
L. Soffer
A. Roeklein

9403080333 940225
PDR ORG NOMA
PDR

3080333

MEETING NOTES

Differing Professional Opinion Re. Stockpiling KI
Informal Meeting Notes: July 24, 1989

Attending: Themis P. Speis
Peter G. Crane
Frank J. Congel
Leonard Soffer
Alan K. Roecklein

Purpose: To clarify points at issue in the DPO submitted to the EDO by Mr. Peter Crane regarding the NRC position on stockpiling of Potassium Iodide.

Summary: Mr. Crane's concerns were as follows:

1. NUREG/CR-1433, "Examination of the Use of Potassium Iodide (KI) as an Emergency Protective Measure for Nuclear Reactor Accidents," does not seem to represent good science in that

- the 20K cost of treating a thyroid nodule including lost time at work, etc., is too low.
- a dose of 3,000 Rad to ablate the thyroid may be low. If up to 7,000 Rad is required, then many more thyroids are at risk from cancer than indicated. In any case, medical follow-up is needed.
- does not evaluate impact of non-fatal cancer.

There was agreement that the 20K cost for treatment of a thyroid nodule may be too low and that costs associated with non-fatal cancer should not be ignored. It was noted that more recent accident analyses suggest probability of large releases is lower and that the expected fraction of total iodine release has decreased from approximately 70% to 15% (NUREG-1150), factors which would deflate the benefit side of the analysis.

It was agreed that an effort would be made to develop a more realistic value for the cost of treatment and that the threshold dose for thyroid ablation would be investigated.

2. Mr. Crane believes that the staff presentation to the Commission on the issue of stockpiling KI was greatly at variance with the Commission Paper SECY-83-362.

- the staff presentation implied no fatalities from thyroid cancer, when by the staff's own estimates, 4% of radiation caused nodules will be fatal.
- the staff transcript said it is not cost effective to spend 20K to prevent a thyroid nodule without making clear that this refers to a harmless nodule, not to all nodules.
- the transcript "glosses-over" the impact of thyroid disease.

3. Mr. Crane noted that NIH is expecting extensive data on adverse effects (if any) from using KI on adults and children in Poland after the Chernobyl accident. There may be new evidence, and this information should be factored into any new analysis. The Chernobyl accident may have more to contribute to this issue than the staff indicated.

It was suggested that the Chernobyl post accident data analysis should be followed closely and noted that an NRC contingent including Dr. Shlomo Yaniv and Dr. Frank Congel would be traveling to the Soviet Union in Sept. to begin implementation of the joint USA/USSR agreement on the evaluation of the health effects of the Chernobyl accident. The KI experience will be included.

4. Mr. Crane said he does not believe that predistribution will work and that his DPO is directed to the issue of whether stockpiling of KI should be added to the option of sheltering and evacuation.

Mr. Soffer noted that revised numbers in a cost benefit analysis for predistribution would probably still not support it, but that the stockpiling option would be worth investigating with the use of updated information in the regulatory analysis.

5. Mr. Crane said he would like agency experts to take a new look at the science behind the cost benefit analysis. He noted that though an April 30, 1984 memorandum from the EDO to the Commissioners acknowledged that the 20K figure was low by a factor of 5, the cost-benefit analysis was never corrected accordingly. NRC guidance to states and localities should use accurate numbers for cost of incidence of thyroid nodules versus cost of stockpiling. The Commission meeting transcript and NUREG/CR-1433 should be openly repudiated to the extent that they are erroneous even if correcting the data does not alter the staff's view that stockpiling of KI is not cost-effective. If a new analysis warrants it, states and localities should be advised to rethink their decisions regarding KI, but in any case, states and localities should have accurate information on which to base their decisions.

Mr. Speis questioned whether a revised cost-benefit analysis and new look at the questions raised by Mr. Crane might resolve the DPO issue informally, since even if Mr. Crane agrees with a 'revised' cost-benefit analysis, there still remains the question in his mind of why use cost-benefit at all (see Item 6 below). Mr. Crane said that in any event, it is NRC's responsibility to share any new or revised analysis with the decision makers at the state and local level.

6. Mr. Crane asked why a cost-benefit analysis was done for the issue of predistribution of KI while several other emergency response items were decided without such an analysis. He noted that to say that KI is not cost-effective implies that those emergency planning measures which are required can meet the test of cost-effectiveness, which may not be the case. He noted that in 1983-84, both OPE and the ACRS had questioned the use of cost-benefit analysis for this issue, if other emergency measures were not subject to the same analysis.

It was noted that the benefits versus risks of predistribution and stockpiling were carefully analyzed at the time and both options were considered inadvisable. A cost-benefit analysis was done on this option as a way of formalizing the decision. Some of the factors considered in

the analysis were: KI addresses only one organ, for only one radionuclide and only one pathway; the shelter and evacuation options were preferred since they address the entire potential radiological impact; adverse health effects from use of KI may outweigh the effects being prevented.

Mr. Speis closed the meeting with an offer to revisit the cost-benefit calculation and to consider some options for resolving Mr. Crane's concerns. The group will meet again in early September.

NOTE: At Mr. Crane's request, a summary of his comments prepared after the July 24 meeting is appended to these notes.