



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D. C. 20555

June 12, 1996

MEMORANDUM TO: ACRS Members  
FROM: *Noel Dudley*  
Noel Dudley  
Senior Staff Engineer  
SUBJECT: ADDITIONAL WRITTEN COMMENTS PERTAINING TO THE HEALTH EFFECTS  
OF LOW LEVELS OF IONIZING RADIATION

In a June 7, 1996 memorandum to the ACRS members [attachment 1], Mr. Jay Carroll recommend that the ACRS determine what approach the National Council on Radiation Protection and Measurements (NCRP) subcommittee will take to study the issues. If the approach will provide a scientifically objective analysis, then the ACRS could prepare a much shorter and less controversial letter. Mr. Carroll does not believe the ACRS has a basis for concluding that the NCRP is hopelessly biased in favor of the linear no-threshold (LNT) hypothesis.

Mr. Theodore Rockwell, as a private citizen, provided comments on the health effects of low levels of radiation [attachment 2]. He has worked for over 50 years in the field and is presently employed by MPR Associates. Mr. Rockwell stated that the LNT hypothesis is scientifically indefensible. He provided examples of practical difficulties in limiting personnel exposure to less than 1 mrem above normal background. Mr. Rockwell concluded that "it is important to our scientific integrity and credibility to resolve the matter."

Mr. Al Tschaeche also provided comments as a private citizen [attachment 3]. He is a certified health physics with over 40 years of experience in the field. Mr. Tschaeche provided a copy of Mr. James Muckerheide's presentation to the Massachusetts' Governor's Advisory Council on Radiation Protection. The presentation contains a listing of scientific experimental data, which do not support the LNT hypothesis. Mr. Tschaeche stated that the NCRP has become one sided in its insistence on adherence to the LNT hypothesis. Mr. Tschaeche trusted that the ACRS would take whatever actions possible to ensure that the NCRP deliberations included information that demonstrates no harmful effects.

Attachments: As Stated

June 7, 1996

MEMORANDUM TO: ACRS Members  
John Larkins, Executive Director, ACRS  
Roxanne Summers

FROM: J.C. Carroll *J.C. Carroll*

SUBJECT: Health Effects of Low-Level Radiation

I said during the May meeting that I would provide a critique of Dana Powers' memos to Roxanne Summers dated May 5 and May 18, 1996. I had only read Dana's May 5, 1996 memo at the time. Dana in his May 18, 1996 memo now accepts the idea, at least in principle, that a "piecemeal approach" (external exposure as opposed to all forms of radiation exposure) may be appropriate. No disagreement there, although I would state it more positively. I believe that the Commission should do what it can to encourage resolution of this issue, recognizing that in the final analysis, the NCRP (and probably ICRP) positions must change before the NRC can change its regulations with respect to low-level radiation. I'm sure this is true from a political point of view, but I also think it is a legal requirement that Federal agencies base their regulations on the recommendations of NCRP. You should probably obtain an OGC opinion on this point. (It would be helpful if Roxanne could research these issues and report her findings to the Committee during the June meeting.)

The Committees also need to explore in detail with NCRP the approach NCRP is taking in its current NRC-sponsored (financially) study and provide comments to NCRP, as appropriate. I'm told that time was not available during the Joint subcommittee meeting to do this. It could be that the NCRP study is perfectly fine and will provide the needed scientifically objective analysis of all available data in a timely manner. If this proves to be the case, a much shorter and less controversial letter could be prepared recommending that the Commission take the needed steps to assure that the staff continues to support and participate in the NCRP and international activities dealing with this subject. Additionally, Dana's main objections to the present draft, most of which I agree with, would go away.

The present draft letter implies that the NCRP study group is hopelessly biased in favor of the LNT. I don't think we have a basis for this conclusion. I've personally known several past and present members of NCRP and don't believe that this is an appropriate criticism, at least to the individuals I know.

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12