

EDO Principal Correspondence Control

FROM: DUE: 04/24/00

EDO CONTROL: G20000191
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FINAL REPLY:

Jim Muckerheide
Theodore Rockwell
Radiation, Science, & Health Inc.

TO:

Chairman Meserve

FOR SIGNATURE OF :

** GRN **

CRC NO: 00-0252

Thadani, RES

DESC:

Radiation Health Effects and the Linear
No-Threshold (LNT) Model of Radiation Protection

ROUTING:

Travers
Paperiello
Miraglia
Norry
Blaha
Burns
Kane, NMSS
Collins, NRR
Larkins, ACRS/
ACNW
Cyr, OGC
Bell, OIG
ACRS/ACNW File
Millman, OEDO

DATE: 04/13/00

ASSIGNED TO:

CONTACT:

RES

Thadani

SPECIAL INSTRUCTIONS OR REMARKS:

Add EDO and Commission on for concurrence.
Chairman and Commission to review response prior to
dispatch. Coordinate response with OGC.
Ref. G19990292.

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April 5, 2000

Dr. Richard Meserve, Chairman
U.S. Nuclear Regulatory Commission
Washington D.C. 20555

**Subject: Radiation Health Effects and the
Linear No-Threshold (LNT) Model of Radiation Protection**

Dear Chairman Meserve,

This letter is to suggest actions needed to resolve the discrepancy between radiation protection policy and the vast body of scientific evidence that contradicts it.

The enclosed brochure describes our organization. We have worked constructively with the NRC since 1994. We have confirmed that the scientific literature on radiation health effects contradicts the LNT, demonstrating specifically that low-dose radiation is not harmful and may be beneficial. We have established that the AEC/NRC/DOE, along with ICRP/NCRP/BRER-BEIR/UNSCEAR/EPA/other national rad protection agencies, have acted to suppress this fact and the data supporting it.

In March 1996 we presented evidence of this situation to a Joint ACRS/ACNW Subcommittee of the NRC. (Muckerheide was invited as the Mass. State Nuclear Engineer and designated NRC State Liaison Officer representative.) Following further ACNW and ACRS Committee meetings, the ACNW wrote a letter to NRC Chairman Jackson that stated:

"Some studies...have...conclusions that do not support the LNT model", and "conclude that...at least a threshold or perhaps...beneficial risk decrements (hormesis) exist at lower doses.

"We conclude that a reexamination of the regulatory model is appropriate...The first task...is an impartial review of the data and their quality...We recommend special attention...to include:

- "1)...scientists other than those...with a reputation built on LNT**
- "2)...[participants] with expertise in statistics...but no prior position on LNT**
- "3)...Consideration of essentially all studies that could relate to LNT."**

Chairman Jackson sent a memo to Rad Research to forward these concerns to NCRP. The October 1998 Draft NCRP Report ignored these concerns.

We expected that this challenge by both the ACNW and the Chairman would result in reviews by both the NRC staff and the ACNW. The ACNW had retained its own consultants, but only from persons who have taken positions against questioning the LNT supporters. However, for a March 1999 ACNW meeting to review the NCRP draft, no such review was planned. Further, invited meeting participants were limited to the NCRP and the Federal agencies, plus NRC contractor Dr. Edward Calabrese, who reported that his contract to find evidence of "hormesis" in the scientific literature had identified about 500 such experiments (with a report due near the end of 1999).

Those who had expressed concern, in 1996 and with the NCRP Draft, were not invited to comment. Critical written comments were not considered. We were advised that we "had had our turn, now it was time for the other side" and that "the Commissioners want this issue to go away." Because we 'showed up' we were able to express some of the problems on the record, but this failed to get the issue raised in the ACNW report to the Commissioners. We found that ACNW's consultants had argued at ANS and HPS that NCRP

Independent Individuals Knowledgeable in Radiation Science and Public Policy;

Committed to Change Radiation Science Policy in the Public Interest

and the agencies should not be challenged. This has great effect on these societies, since DOE has new funds to distribute.

The transcripts of the March 26, 1996 Joint Subcommittee meeting, the June 14, 1996 ACRS meeting, and the Dec 16, 1997 ACNW meeting contain data and allegations that the NRC must consider in assessing and accepting the NCRP report. They also indicate the subsequent unwillingness of the ACNW and the NRC to consider the valid data and contributions from stakeholders and the NRC staff itself. The March 23-24, 1999 transcripts also contain data and allegations that must be considered in the light of the previous transcripts and correspondence.

In the March 26, 1996 transcript, NRC Senior scientist Charles Willis presented the then-recently-issued HPS Position that health effects should not be calculated for doses below 5 cSv in a year and 10 cSv lifetime. Following our presentations, he also stated on the record:

"...it's clear to many of us that we are not seeing the predicted ill effects at low doses, as has been pointed out to you.

"I personally came to this hormesis observation fairly late in the game. It wasn't until 1958 that I was working with the laboratory situation [Note: Oak Ridge] where we were doing experiments with below-background levels of radiation, taking the potassium-40 out and seeing what the effects would be on the cellular level, when we saw that the cells looked good but they didn't function. So we couldn't publish the results, another ill effect of the paradigm about the linear hypothesis."

Clearly this allegation of a pattern of acceptance of scientific misconduct—of suppressing and biasing the data -- to support the LNT, warrants investigation.

We consider that if a licensee, in support of a license application, had submitted reports containing the type of egregious selection, misinterpretation and suppression of data that characterizes the Draft NCRP Report, that licensee would be, or should be, subject to an NRC charge of submitting a "material false statement." We also allege that the actions of the NRC Regulatory Research Staff constitute wrongful efforts to suppress relevant data.

We request that you initiate the following NRC actions:

1. Investigate the allegations that Draft NCRP Report SC1-6 constitutes "material false statement" or equivalent. If you defer this investigation until the final report, please inform the NCRP that such an investigation will be undertaken if formal specific allegations of false data and substantive omissions are made. Inform participating scientists that "scientific misconduct," as defined by the U.S. Office of Research Integrity, may be alleged as warranted.
2. Direct the NRC staff (technical staff, General Counsel, Inspector General, and others as warranted) to report on the data, and allegations of falsification of data and suppression of evidence, reflecting the referenced ACNW and ACRS transcripts and related documents. This report should anticipate legal challenges.
3. Obtain outside reviewers that include the scientists and analysts who have documented the peer-reviewed scientific data that contradict the LNT, rather than contracting solely with the LNT supporters and "neutral observers" who fail to 'balance' the LNT supporters in closed review bodies and the radiation protection interests in the NRC and other agencies. Require comparisons with variations of natural radioactivity sources and data on medical exposures (necessary and unnecessary) to quantify actual and potential low-level radiation health effects and risks.
4. Initiate a rulemaking on low-level radiation health effects to establish an NRC policy on radiation risk. Explicitly incorporate the substantial evidence produced and submitted by eminently qualified scientists and analysts, that contradict the LNT. Include data that show health benefits and the prevention and treatment of cancer and other diseases. Incorporate the data submitted to the ACNW and ACRS. This rulemaking must document the scientific literature that contradicts the LNT, including assessments of the data and evidence that are claimed to support the LNT. This rulemaking

must engage key scientists of the many critical scientists and reviewers who are not committed to, and do not have conflicts of interest in, supporting the LNT. Incorporate these data and analyses also in current related rulemakings, including, e.g., the Yucca Mountain and materials release standards. Plan for potential subsequent rulemakings on specific radiation protection standards, e.g., Part 20, accordingly.

5. **Defer all extreme decommissioning and "cleanup" standards, and other extreme interventions, that are without interim risk to public health and safety. Include the 25 mrem per year D&D standards, and extreme ALARA guidelines and NRC impositions on licensees.**
6. **Assure that the NRC Staff, especially in Regulatory Research, is fully cooperating with the U.S. GAO investigation currently being undertaken at the request of Senator Domenici, and that the NRC will lead the effort to establish scientifically and institutionally credible assessment and resolution of radiation health effects data, science, and the lack of risks at low doses.**
7. **NRC should further encourage research into both the delivery of Low-Dose Radiation for medical applications, and the technology research needed to establish revised standards.**

This effort is critical to our ability to apply radiation technologies to meet the real needs of the growing world population (growing at the rate of the total U.S. population every three years), with increased per capita resource requirements: for food and water, energy and industry, and medical needs, with reduced environmental consequences. We very much look forward to participating with you in this endeavor.

The short-term benefits to regulators and industry by the current commitment to waste massive public resources by fabricating public fears of radiation are ethically and morally untenable, as well as legally questionable.

The recent Airlie House BRPS Conference at which you spoke demonstrated radiation protection policy establishment retreat from even the limited 1997 "Wingspread Conference" progress.

As the head of one national radiation protection program 'hissed' to me at the BRPS Conference: "We know your agenda; to kill the golden goose!"

Sincerely,


Jim Muckerheide
President


Theodore Rockwell
Vice President

cc: NCRP

Enclosures:

RSH Brochure

RSH Statement: NRC Failure to Assure Adequate NCRP Review

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NRC FAILED TO ASSURE ADEQUATE NCRP REVIEW OF THE LLR DATA

Many independent scientists, including giants knowledgeable of the underlying biology and health effects, from Robley Evans and Lauriston Taylor to Rosalyn Yalow and Don Luckey, from Ludwig Feinendegen and Shu-Zheng Liu, to Zbigniew Jaworowski and Gunnar Walinder, to Sohei Kondo and Kiyohiko Sakamoto, and many others, have produced strong scientific evidence, and positions, that are ignored or casually dismissed by NCRP SC1-6, BEIR-VI, and other policy-setting groups biased to support extreme standards in the name of "radiation protection." Blindly reducing radiation levels, rather than maximizing public health, has become the goal.

In presentations to the Nuclear Regulatory Commission's (NRC) Joint Subcommittee of the Advisory Committee on Reactor Safeguards (ACRS) and Advisory Committee on Nuclear Waste (ACNW) in March 1996, the NRC's own Myron Pollycove, M.D., Fellow of the American College of Nuclear Physicians, and James Muckerheide, Massachusetts State Nuclear Engineer, NRC State Liaison, and Member of the Massachusetts Advisory Committee on Radiation Protection (who edited and presented its substantial report on the data that contradict the LNT) documented specific cases of data that have been suppressed and misrepresented, going back to the 1950s. In addition, the NRC's Charlie Willis stated that he "belatedly became aware of hormesis, only in 1958." He observed experiments with potassium from which the radioactive K-40 was separated in Oak Ridge calutrons, in which "the cells looked ok, but they didn't function." He stated that the LNT paradigm kept these results from being published.

Dr. Pollycove also provided numerous examples of the suppression of data in his June 1996 presentation to the ACRS. The NRC has not initiated inquiries to confirm these allegations.

In July 1996, responding to the evidence of ICRP/NCRP/BRER failures to consider existing relevant data, the ACNW wrote to the NRC Chairman in reference to undertaking NCRP SC1-6:

"We recommend that the need for special attention be conveyed to the NCRP regarding its study. Such attention should include: 1) Assurance that the study includes scientists other than those who are "recognized experts" with a reputation built on the LNT; 2) An evaluation of the data by an entity with an expertise in statistics or information science but no prior position on LNT...3) Consideration of essentially all studies that could relate to the LNT. We will follow the [NCRP] program...and will report to the Commission on the study and its implication."

The Commissioners sent this warning to Regulatory Research, which forwarded it to NCRP.

In the December 1997 ACNW meeting, NRC's Carl Paperiello stated,

"I've never seen any of the various NCRP, ICRP, or any of these organizations seriously look at the data. It gets tossed off...when I look at these various committees they're self perpetuating, there's interactions between members that sit on one and sit on the other... you don't really have the independence."

- over -

This allegation alone, by a senior NRC manager, warrants an inquiry into the conduct of the ICRP/NCRP/BRER groups. This is no mere collegial difference of opinions among peers.

However, NCRP took NRC's funds, but defied its warning.

The NCRP failed to consider much of the data provided to it. Moreover, the NRC, through ACNW, ACRS, or Regulatory Research, failed to assess the adequacy of the NCRP SC1-6 report's review of the data provided to it as required by the NRC. Under NRC procedures such a report could be considered a "material false statement," subject to NRC investigative actions.

It was (and is) therefore appropriate that the NRC undertake a proceeding to respond to these allegations. Such a proceeding would involve the many objective and knowledgeable independent scientists who have produced and analyzed the contrary scientific evidence, but do not have the LNT-supporters' conflicts of interest. They have largely abandoned commenting to the ICRP/NCRP/BRER groups and the agencies as a "waste of time and effort."

The record developed just in these NRC transcripts justifies formal inquiry. It is the solemn obligation of the responsible agencies to undertake the effort needed to assure that all the relevant data are adequately considered and incorporated. At the very least, when specific, serious problems are pointed out — data ignored or data mishandled — responses require corresponding specificity. This NRC has conspicuously failed to do in the case of the NCRP report. The funding and regulating agencies (NRC, EPA, DOE, etc.) should formally assess and reject reports that are not scientifically sound, constitute an objective group and provide evidentiary hearings as necessary, to see that the job is done right.

The ICRP/NCRP/BRER group claims it is not a policy-setting body, but merely advisory. But in fact, when NRC, EPA, establish rules, they insist they are not free to deviate from the LNT despite contrary data. So these "advisory opinions" do in fact have the weight of law, unaffected by later scientific commentary (cf. Robley Evans' 1974 refutation of BEIR 1972). Therefore it is essential to resolve this issue before the NCRP issues a "final" report; there is no other chance absent competent agency rulemakings that consider NCRP/ICRP/BRER reports as unreviewed "advisory" reports subject to administrative proceedings.

When NRC raises no substantive questions on NCRP SC1-6, issued for comment, it must be assumed that the report fulfills the expectations of the NRC and its responsible personnel.

If NRC is unwilling to address this problem, it is then the responsibility of other investigating bodies and the Congress to investigate and take corrective action.

The many scientists that produce and analyze the data that refute the LNT have exhausted all normal scientific channels to achieve objective evaluations. The current situation seems to have peaked in the conduct of the Wingspread Conference in July-August 1997 that produced promises of responsible corrective action in radiation science and radiation protection policy bodies and government agencies; but these promises were never kept. Instead, the egregious BEIR VI report was produced for the EPA without considering the substantive contrary data (which is not limited to "the Cohen study"), and now the NCRP SC1-6 report has been produced for the NRC without adequately considering existing data provided to it. And DOE is about to embark on an indefinite continuation of long-range research without adequately considering or applying the existing data.