



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

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NOTE FOR: S. Bilhorn, OCM/KR
J. Gray, OCM/JC
R. MacDougall, OCM/FR

FROM: Stephen G. Burns
Executive Assistant
to Chairman Carr

SUBJECT: CHRONOLOGY - BRC

I am providing the attached chronology on
BRC prepared by Mr. Miller's staff, because
it is not clear that all of the offices
received a copy at the hearing on
July 26, 1990.

Stephen G. Burns
Executive Assistant
to Chairman Carr

Attachment:
As stated

cc: H. Thompson

19
Taylor
Sneyek
Thompson
Bluba
Bernard
Beckford
Kinto
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CHRONOLOGY OF THE DEVELOPMENT OF THE NRC'S "BELOW REGULATORY
CONCERN" POLICY AND RELATED EVENTS

Prepared by Office of Representative George Miller

SUMMARY:

The NRC began work on the BRC policy statement issued on June 27, 1990 in late 1987. The BRC issue was brought to the forefront during the Commissioner's deliberations on the question of permitting the distribution of irradiated gemstones. The NRC staff objected to gemstone irradiation on the grounds that it was a frivolous practice and thus contrary to the 1965 Atomic Energy Commission policy statement on the use of radiation in consumer products. The Commissioners disagreed and directed the staff to permit this practice and also develop a BRC policy statement that applied to all radioactive materials.

It must be noted that the Commission had already issued a BRC policy statement in 1986 for low-level waste in response to a little-noticed provision in the Low-Level Radioactive Waste Amendments Act of 1985. The individual dose level in the 1986 policy statement was "a few millirem" per year per exempted practice.

In June 1988 NRC staff experts held a two-day meeting concerning the BRC policy in Baltimore, Maryland where they agreed that the individual dose level per deregulated practice should be 1 millirem per year. In July 1988, Victor Stello, then Executive Director for Operations, directed the staff to increase the dose level to 10 mrem per practice because the 1 mrem level was not practical.

Despite the Stello directive, staff experts within the NRC Office of Nuclear Materials Safety and Safeguards (NMSS), continued to support the 1 mrem dose level. Under pressure from Stello and others, NMSS withdrew its objection to the 10 millirem dose level on September 14, 1988 after a 100 person-rem per year collective dose level per practice was added to the policy statement. On September 30, 1988 the Commissioners directed that the 100 person-rem collective dose level be removed from the draft policy statement.

On December 12, 1988, the NRC published in the Federal Register an Advanced Notice of the BRC policy which contained a 10 mrem individual dose level per practice and no collective dose level and allowed for an unlimited number of deregulated practices provided that no individual be exposed to more than 100 millirem per year from all exempted practices.

In February 1989 the EPA severely criticized the BRC policy statement, stating that "we do not believe the policy would adequately protect public health and the quality of man's

environment" and that the individual dose limits were "too high." EPA also said the policy was contrary to the well established principle that any radiation exposure, no matter how low, should be justified by some benefit. In April 1989 EPA submitted a draft low-level waste rule to OMB which contained a BRC regulation which established a total individual exposure level of 4 millirem per year for all BRC waste practices. This rule is still at OMB, partially due to objections by NRC and DOE that the permissible radiation exposure levels are too low.

Throughout 1989 the Commissioners, especially Chairman Carr, pressured the staff concerning the need for higher dose limits in the BRC policy and the need to reverse the NRC's longstanding policy that any radiation exposure should be justified by a resulting social benefit. On October 13, 1989 the Commissioners directed the staff to prepare a BRC policy with a 10 mrem individual dose level, 1000 person rem collective dose, and reverse the justification of practice policy.

On June 27, 1990 the NRC released a final BRC policy statement which contained a 10 mrem dose level for certain practices, 1 mrem for consumer products, a 1000 person rem collective dose level, and a limit of 100 mrem individual exposure per year from all exempted practices, and a reversal of the justification of practice policy established by the AEC in 1965.

CHRONOLOGY

March 16, 1965, Atomic Energy Commission issues concerning the use of radioactive materials in consumer products which states that there should be a social benefit from any use of radioactivity in consumer products and discourages the use of radiation for frivolous purposes. The policy contains the following provision:

"However, in cases where tangible benefits to the public are questionable and approval of such a product may result in widespread use of radioactive material, such as in common household items, the degree of usefulness and benefit that accrues to the public may be a deciding factor. In particular, the Commission considers that the use of radioactive materials in toys, novelties, and adornments may be of marginal benefit." (see "Use of Byproduct Material and Source Material- Products Intended for Use by General Public (Consumer Products)" 30 F.R. 3462 March 16, 1965) Note: This policy was overturned by the June 27, 1990 BRC Policy Statement.

January 15, 1986, Low Level Radioactive Waste Policy Amendments Act of 1985 signed into law. The law contains a little noticed provision that directs the Commission to establish standards and procedures to consider deregulating certain low-level radioactive wastes.

August 29, 1986, NRC Below Regulatory Concern Policy Statement (51 FR 30839) In response to the 1985 Low-Level Waste Act Amendments the NRC states that it will consider exempting wastes if, "The maximum expected effective dose equivalent to an individual member of the public does not exceed a few millirem per year for normal operations and anticipated events."

July 28, 1987, NRC staff informs Commissioners of their plan to stop distribution of neutron-irradiated gems. Commissioners disapprove staff plan. (see Memorandum from Victor Stello Jr. Executive Director for Operations to Commissioners entitled "Distribution of Radioactive Gems Irradiated in Reactors To Unlicensed Persons, October 5, 1987)

November 24, 1987, NRC Commissioners direct staff to permit distribution of irradiated gems and "develop a proposed Commission policy statement that will identify a level of radiation risk below which government regulation becomes unwarranted." (see November 24, 1987 NRC Memorandum for Victor Stello, Jr. Executive Director for Operations from Andrew L. Bates, Acting Secretary)

June 10, 1988- NRC staff experts agree on an individual dose criterion of 1 millirem per year for the BRC policy during staff retreat in Baltimore, Maryland. (see April 30, 1990 letter from Chairman Carr to Congressman Miller)

July 18, 1988, Mr. Victor Stello, Executive Director for Operations directs the staff to raise the individual dose criterion to 10 millirem because a 1 millirem level is impractical. (see letter of June 29, 1990 from Acting Chairman Curtiss to Congressman Miller, date of direction given by Tom Combs NRC Congressional, in July 16, 1990 telephone conversation with Dan Adamson of Interior Committee staff)

September 8, 1988, Robert M. Bernero, then Acting Director of the NRC Office of Nuclear Material Safety and Safeguards, objects to the use of a 10 millirem per year dose level and states preference for a 1 millirem per year dose level.

Bernero memo of September 8, 1988 contains the following:

"National Council on Radiation Protection and Measurements (NCRP), Nuclear Energy Agency of the Organization for

Economic Cooperation and Development (NEA), and the International Atomic Energy Agency (IAEA) have recognized the potential for multiple exposures and, accordingly, have selected the lower value of 1 mrem as the "insignificant" dose with the expectation that individuals could be subject to many exemptions granted under the 1 mrem criteria."

"NMSS recognizes that the collective dose criteria of 100 person-rem is an additional limiting factor when determining if exemptions could be granted without further analysis, but notes that the limitation of collective dose does not afford a reasonable assurance that individual doses will not accumulate as a result of multiple practices."

"Thus, if 10 mrem is used as the individual dose criterion, then individuals subject to multiple exposures could approach the dose limits, leaving little room for exposures by future sources of much greater societal value. Such a circumstance would be far less likely if the Policy Statement were limited to 1 mrem per year."

"Once waste streams and products are exempted, it will be difficult to correct problems they create in the environment. While assumptions for modeling are usually conservative, experience has indicated that once an exemption is granted the analyzed situation may not remain accurate because of unexpected ways in which the products are handled and disposed of."

September 14, 1988, NMSS withdraws its objections to the 10 millirem individual dose criterion.

Memorandum For: Victor Stello, Jr. EDO, From: Hugh Thompson, Director Office of Nuclear Material Safety and Safeguards, September 14, 1988

"In summary, NMSS concurs that the proposed BRC policy statement provides an adequate approach to protect public health and safety. This assurance is provided by the 100 person-rem guidance and the evaluation by the NRC staff to identify and to require further analysis if the potential exists for an individual to accumulate significant exposures from multiple practices."

September 14, 1988, Note from Margaret Federline to Commissioner Carr; Subject: September 16, 1988 Commissioner Briefing on BRC

"I have attached the letter from Bernero to Stello which argues that a 10 mrem BRC number is too high and may result in individuals subject to exposure from multiple practices receiving close to the 100 mrem proposed dose limit for the public in draft Part 20. This lead Stello to put a sentence on page 6 of the Policy Statement that says "The Commission intends to assure that it is unlikely that any individual will experience exposure which exceed the 100 mrem limit." This satisfied Hugh Thompson and he was able to concur for the office but I understand that Bernero, Cunningham, and others still have serious objections."

September 16, 1988, Mr. Thomas Tipton, Division Director, Nuclear Management and Resources Council (NUMARC) testifies before the Commissioners in support of individual dose criterions "in the range of 10 to 20 millirem per year as the generic BRC." (see transcript of Commission meeting dated September 16, 1988, pg. 58)

September 26, 1988, the Department of Energy issues a directive which states, "Wastes containing amounts of radionuclides below regulatory concern, as defined by Federal regulations, may be disposed without regard to radioactivity content." (see DOE ORDER 5820.2A, Radioactive Waste Management, September 26, 1988)

September 30, 1988, Commissioners remove staff recommendation that a 100 person-rem per year per practice collective dose criterion be included in the policy statement. (see September 30 Memorandum For: Victor Stello, Jr. EDO, From: Samuel J. Chilk, Secretary, pages 6, 9 and 10)

December 12, 1988, NRC publishes in Federal Register Advance notice of proposed "Policy Statement on Exemptions From Regulatory Control"

"Individual doses from practices exempted under this policy should not be allowed to exceed 100 mrem per year." "... a 10 mrem individual dose criterion is proposed as the basis for exemption decisions based on simple analysis and judgements."

"The Commission requests comments on this issue, including comments on what the magnitude of the collective dose criterion, if any, should be."

February 2, 1989, EPA criticizes NRC's December 12, 1988 Advanced Notice, EPA's comment include the following statements:

"EPA has reviewed the NRC proposal to develop a policy on regulatory exemption (53 FR 49886). Based on our review of the concepts and preliminary conclusions presented, we do not believe the policy would adequately protect public health and the quality of man's environment."

"Indeed, a number of existing EPA standards already preclude exemptions that would otherwise be automatically granted under this proposed policy."

"As the Federal agency with general responsibility in this area, EPA agrees with these points of view, 10 mrem/y is too high: consideration of the possibility of exposures as high as 100 mrem/y is totally inappropriate..."

"There is no valid scientific basis for truncation of assessments of effects on public health for these exemption decisions, based on dose level alone. This is the case because the low individual doses being considered for truncation should be assumed to carry the same risk per unit exposure as the maximum individual doses..."

April 6, 1989, EPA submits draft rule to the Office of Management and Budget concerning Low-Level Waste which includes a BRC regulation which establishes an exposure limit of 4 millirem per year per individual for all BRC waste streams. (Note: under this rule the 4 millirem exposure limit would have to be divided between all radioactive waste streams, including hospital wastes, reactor wastes, wastes from research and educational facilities, manufacturing wastes, and Department of Energy waste. Under the NRC's BRC policy each "practice" could expose individuals to up to 10 mrem a year. One possible outcome would be the allocation of a 10 millirem each to reactors, hospitals, research facilities, industry, DOE etc., adding up to an annual individual exposure of up to 50 millirem. If practices were defined more narrowly exposures to the public would be higher)

May 9, 1989, Mr. Leo P. Duffy, Special Assistant to Secretary Watkins testifies before the House Armed Services Committee that BRC levels will have a significant effect on the cost of cleaning up the DOE weapons complex.

Duffy said, "We are trying to get down to the \$12 billion number rather than the \$25 billion and the \$25 billion rather than the \$50 billion. We are trying to do this with technology. One of the major areas that would have a significant difference on cost is if the Environmental Protection Agency and the NRC identified a below-regulatory concern number of how clean is clean." (see House Armed Services transcript HAS129160, lines 667 to 702)

June 16, 1989, NRC staff recommends individual dose criterion of 10 mrem per year per practice and collective dose criterion of 500 person rem per year per practice to Commission (see April 30, 1990 letter from Chairman Carr to Congressman Miller).

July 11, 1989, Commissioner Carr, recently appointed NRC Chairman by President Bush, pressures staff to increase radiation exposure levels for BRC policy, remove justification of practice, and questions the staff's view that there is no safe level of radiation exposure.

Carr makes many interesting statements, including the following:

"But I personally think that's the wrong signal and that I happen to be one of those guys that don't necessarily believe that a little radiation is harmful because I live in it." (see transcript of Commissioners meeting on BRC, July 11, 1989, pg. 27)

September 25, 1989 Memorandum From Paul Turner, U.S. Council for Energy Awareness, To: Public Affairs Contacts, Subject: Below Regulatory Concern

Note: This memorandum contains a draft press release announcing the nuclear power industry's submission of a petition to exempt reactor wastes from deregulation. It indicates the industry's strong support for BRC at that time.

October 13, 1989, Commissioners reject NRC staff's June 16 recommendation and direct the staff to prepare a policy statement with a 10 mrem per year per practice, 1 millirem per year for practices with widespread distribution, a 1000 person rem collective dose criterion, and supersede the 1965 policy statement on consumer products. (see Memorandum for James M. Taylor, Acting Executive Director for Operations, from Samuel J. Chilk, Secretary, Subject, Staff Requirements, SECY-89-184-Proposed Commission Policy Statement on Exemptions From Regulatory Control, October 13, 1989)

December 12, 1989, NRC staff prepare a memo for the Commissioners that identifies a number of problems with the BRC policy proposed by the Commissioners in the October 13, 1989 Staff Requirements memorandum.

Office of Research Comments on 12/05/89 Version of Potential Areas of Inconsistency Memo to the Commissioners, includes the following:

"The total collective dose from effluents from all operating nuclear power reactors in the United States was 110 person-rem."

"The use of a 1,000 person rem value could, for example, be construed as implying that the controls of effluents or containment systems for nuclear power reactors have been too stringent."

"... the use of a cutoff in a safety analysis determination would be inconsistent with an environmental assessment of the exemption under NEPA." (note: This comment refers to the Commission's directive to not consider doses under 1/10 of a millirem when calculating collective dose)

December 14, 1989, Memorandum For: Harold R. Denton, Director, Office of Governmental and Public Affairs, From: James M. Taylor, Executive Director for Operations, Subject: Questions on Commission Policy on Exemptions From Regulatory Control

This memo is in response to questions submitted by the NRC Office of Public Affairs and Office of State, Local and Indian Tribe programs. It contains numerous interesting statements, such as the following:

"Yes, as long as the individual and collective dose criteria and other policy conditions are met, materials such as radioactive cosmetics could be allowed."

"If the material is exempted from regulatory control, the in most situations, labelling and notification of the presence of the radioactivity would not be required."

"As discussed in answer to question 1, if the Commission characterizes its exemption decisions (e.g. BRC waste disposal) as regulations within the basic framework of radiation protection, Federal regulations would preempt any conflicting State laws, to the extent that those laws dealt with the radiological properties of the material."

"It is anticipated that no regulatory agency will be required to monitor the burial sites receiving BRC waste streams."

December 15, 1989, Memorandum by Mike Weber, Assistant to Chairman Carr, states the following:

"Staff is concerned about the omission of "justification of practice" from the Commission's ERC policy statement. Staff's ERC policy statements required that NRC only consider justified practices for consideration for exemption. Justification, i.e., exposure of humans to radiation is justified by the societal benefits derived from the use of the radiation, is one of the three basic tenets of radiation protection (along with ALARA and dose limits) as embraced by ICRP, NCRP, EPA and many of private and public organizations and agencies. Justification was previously included in AEC's policy statement on consumer products (ca. 1965) and provided the flexibility for staff to dismiss uses of radioactivity that it considered frivolous and without justification."

"However, this decision was not intended to remove justification as a tenet of radiation protection; rather the Commission believes that justification of practice should be determined by society through the entrepreneur who proposes the practices, the health physicist who prepares the exemption application, and the consumer who elects to purchase or boycott the product."

December 15, 1990, in response to criticisms that the allowable radiation exposures under the Clean Air Act are too low in relation to background radiation, EPA states:

"Many risks associated with natural background radiation are relatively high and, thus, are not appropriate as a benchmark for evaluating the need for regulation." (see Federal Register, December 15, 1989, pg. 51691)

March 5, 1990, Federal Aviation Administration issues an advisory concerning the hazards of radiation exposure to air carrier crewmembers. (see FAA Advisory Circular, Radiation Exposure Of Air Carrier Crewmembers, Robert R. McMeekin, M.D. Federal Air Surgeon, March 5, 1990)

June 27, 1990, Commission issues Below Regulatory Concern Policy Statement with 10 and 1 millirem individual dose criterion, 1000 person rem collective dose, and revokes the 1965 policy statement on consumer products.