Congress of the United States

Washington, DC 20510

September 19, 2006

Dr. Paul L. Ziemer
Chairman
Advisory Board on Radiation and Worker Health
c/o National Institute for Occupational Safety and Health
4676 Columbia Parkway MS C-46
Cincinnati, OH 45226

RE: Chapman Valve, Special Exposure Cohort Petition (SEC Petition # 0043)

Dear Dr. Ziemer:

We write to express our support for the Special Exposure Cohort Petition (file #: 012-05-3653) filed by former employees at Chapman Valve Manufacturing Company in Springfield, Massachusetts and their survivors. Outlined below are issues that we ask the Board to consider. A number of the issues involve highly technical matters and we respectfully suggest that the Board consider engaging its technical support contractor to assist in its review.

Congress passed the Energy Employees Occupational Illness Compensation Program Act (EEOICPA) in 2000 to ensure that nuclear energy workers would be compensated for illnesses caused by exposure to radiation and other toxic substances. These unsung heroes of the Cold War helped to build our nation's arsenal. In many cases, their work was performed in top-secret conditions, and the extremely dangerous nature of their jobs was concealed from them. For the most part, exposure monitoring was inadequate. It is often very difficult, if not impossible, to establish the level of radiation exposure for each worker. EEOICPA addressed this problem by allowing workers and their survivors to petition to become members of the Special Exposure Cohort when it is not feasible to estimate radiation doses with sufficient accuracy.

Chapman Valve machined uranium for the Atomic Energy Commission (AEC) in 1948 and 1949. Their employees were exposed to radioactive materials in the course of this AEC-related work. Cleanup activities took place from 1991 to 1995 under the Department of Energy's Formerly Utilized Sites Remedial Action Program.

The SEC Petition for these Chapman Valve workers was submitted on August 15, 2005, qualified on November 9, 2005, and the SEC Evaluation was due, under the terms of NIOSH's Interim Final Rule, on May 9, 2006. We received the NIOSH SEC Evaluation Report on August 31, 2006, more than three months after the 180-day deadline established under EEOICPA. The Evaluation Report concludes that it is feasible to complete dose reconstructions with the data that has been recovered for this site. We have serious questions about the basis for this conclusion.

NIOSH is relying upon the February 22, 2005 Site Profile (ORAU-TKBS-0033) for the Chapman Valve site as the basis for concluding that it is feasible to reconstruct the dose for these workers. That Site Profile was issued only one day after a public meeting with former workers in February 2005. At that meeting, NIOSH received numerous pieces of evidence and testimony regarding the activities at the plant. Since the Site Profile was issued the next day, it could not have incorporated evidence from that meeting.

We have been advised by NIOSH that the agency intends to revise the Site Profile. We applaud this decision. In light of this planned revision, however, we find it curious that the Evaluation Report would be issued based in substantial part on analyses from the existing Site Profile. While NIOSH states these changes to the Site Profile will not make a difference in the SEC Evaluation Report, we have difficulty understanding how this could be the case. At a minimum, the petitioners should be allowed to see the revised Site Profile and to review it in conjunction with the Evaluation Report to make appropriate comment.

We are also deeply concerned about the conclusions reached by the Evaluation Report. Under EEOICPA, NIOSH has the burden of demonstrating that the data is representative of the highest exposed individuals at a worksite, and the Board has adopted evaluation criteria regarding these workers:

> *4. **Consideration of Data and Data Subsets** –*
> NIOSH must demonstrate that there are sufficient data (e.g., is the sample size adequate) and that the data are representative of the highest exposed individuals within the class. This may involve looking at subsets of larger exposure data sets. Often these subsets are less comprehensive for a given time period (usually earlier years). NIOSH should assess how "robust" these data or data subsets are for the purposes of dose reconstruction. In answering this question NIOSH should consider whether they can determine the representativeness of the data. Some questions which should be considered in evaluating representativeness include: 1) Are the data from the site in question, from a surrogate site(s), or both; 2) If from a surrogate site, have these data been appropriately evaluated and have the uncertainties due to extrapolation from another site been accounted for; *3) Do they represent the highest exposed individuals? 4) Do they represent the entire exposed cohort; 5) Do they represent all workers ever on the site; 6) Are the data from "cohort" type sampling?; and 7) Can the data be interpreted in a way to ensure that the maximum plausible dose can be determined?* (emphasis added).

While NIOSH states that it "did identify employees at the facility during this time period for which complete dose reconstruction would be feasible," (Evaluation Report, page 37), we have serious concerns about this conclusion with respect to all members of the class. Indeed, the Department of Labor has recently remanded a number of cases to NIOSH for additional study based on inadequacy of the data.

We are particularly concerned that data relied upon for the Evaluation Report is not representative of the maximally exposed individuals in the class. This concern arises from our review of raw data that we recently received from NIOSH regarding workers' exposure at Chapman Valve. A few key issues arose from our review:

First, records indicate that routine monitoring for uranium intake took place on only three occasions (July, September and October of 1948) and involved only 33 samples covering 32 workers. Chapman Valve used cohort sampling, covering a range of job classifications, rather than sampling only the most exposed workers. (NIOSH concedes in its SEC Evaluation report that the "exact selection criteria is unknown.") Samples were taken from only six and five workers in September and October, respectively, and none of the workers monitored in October were production workers, who face the greatest risk. Instead, bioassays were concentrated in non-production workers, such as the Associate Director for Research, Foremen, Personnel Managers, Chief Electricians, Engineers, Inspectors and others who would have had far less opportunity for internal radiation exposure at this facility. Such samples clearly would not reflect the highest exposures at the plant.

Second, Chapman Valve also did not take bioassay samples from the individuals with the four highest film badge readings, which reflect high levels of external exposure. These readings were 650, 555, 500 and 500 mr per week. The routine bioassay samples did not include these maximally exposed individuals.

In addition, there was only one incident monitored—a fire presumed to be in early June 1948. Samples were taken from seven workers on June 11, 1948, five of whom had elevated uranium in urine readings. Only two workers involved with fire and its cleanup were re-sampled, both guards. Their bioassay readings were the same or higher a month later. NIOSH assumes the fire occurred on June 10, but the date of the fire remains unknown, despite extensive efforts by the Chapman Valve families to ascertain the date through archival research. We believe this uncertainty should be reflected in the estimations of the monitored workers, so there is no possibility of an underestimate of the uranium intake of these workers. In addition, uranium machining facilities are known to have frequent fires, yet workers were only sampled after one particular incident. NIOSH therefore simply does not have data that reflects other potential exposures.

Finally, NIOSH has failed to explain how it accounted for the work history of those individuals with bioassay samples, nor has it adequately indicated how it assessed the duration of time between when the workers were exposed and when the bioassay samples were taken. In light of these shortcomings, we fail to see how NIOSH can conclude that it has representative data from which it can develop a plausible upper bound dose estimate.

In addition to these specific concerns regarding the analysis of worker monitoring data relied upon in the Evaluation Report, we also have reservations about NIOSH's treatment of other factors contributing to workers' exposure.

For example, Oak Ridge National Labs documented the presence of 2.16% enriched uranium at the Chapman Valve site. However, this is not explained in the Site Profile or the SEC Evaluation Report. As part of a radiological survey tied to the environmental cleanup program in the 1990s, the Labs performed an isotopic analysis on two uranium samples. One of the two samples was positive for enriched uranium. Despite this evidence, the NIOSH Site Profile assumes only natural uranium was processed. NIOSH has failed to explain how it will account for enriched uranium in dose reconstructions, given the lack of data on the amount of material and on the processes used to handle it. Nor has it shown how it will avoid underestimating workers' potential exposures to enriched uranium.

Also, the cracking furnace and uranium chip incinerator operations, which may have been intermittent and had high exposure potential, appear not to be adequately addressed in the Report. (They were also overlooked in the Site Profile.) Furthermore, although the stipulated time period for operations was not long, documents indicate potential for widespread exposures, such as through contamination spreading from the production area into the lunchrooms. After the Chapman Valve site had ceased production and the scrap and waste had been shipped away, the site had to be washed down several times. Even with this washing, residual contamination remained embedded in the building.

For the above reasons, we have serious questions about NIOSH's conclusion that the handful of production worker bioassays is representative and from this that it is able to develop a plausible upper bound dose estimate. In light of these concerns, we respectfully urge the Board to carefully review this SEC Evaluation Report and the raw data relied upon by NIOSH. Again, in reviewing the technical issues, we urge the Board to assign a review of the Evaluation Report by audit contractors, as it did in the SEC petitions at Iowa Ordnance Plant, Mallinckrodt Chemical, Rocky Flats, and Oak Ridge Y-12.

Sincerely,

Edward M. Kennedy

John F. Kerry

Richard E. Neal

cc: Dr. John Howard, Director, NIOSH
Larry Elliot, Director, Office of Compensation Analysis and Support, NIOSH