We appreciate the opportunity to comment on a regulatory program for the control of radioactive materials and the protection of public health. We thank you for scheduling an accessibility session where questions were answered and especially for extending the comment period in response to our request.

In general government at all levels promoted nuclear weapons and nuclear energy as useful to society long before it grasped the dangers and the extraordinary control that would be needed for these materials. Today we are facing the era of nuclear waste when the legacy of that folly is coming due. The General Accounting Office recently reported that the Environmental Management Program of DOE has over the last six years cleaned up nuclear waste sites, spending $35 billion. Unfortunately over that same period its nuclear waste liabilities have grown by $94 billion, 2.7 times faster.\(^1\) This

situation is clearly not sustainable. In the face of this situation, health standards and public protections must remain strong. States and local governments are experiencing extraordinary problems in relation to the nuclear legacy as seen at the Waste Isolation Pilot Project (WIPP) in New Mexico, Hanford in Washington and Savannah River in South Carolina. In New York highly radioactive LIQUID waste is being transported through our state---an activity never undertaken before, when this material could be processed safely in Canada.

In the future, states and local governments will need to stand up for strong health protections and environmental standards related to radiation and the exposure of the public. We need New York to keep our standards strong in the face of current challenges. We urge the DEC to strengthen these Part 380 regulations as just one step. Below we first address major or broad issues, 1-14, and then more specific items, 15-47.

Major or Broad Issues

1. There is a real need for a Clear Introductory Paragraph that explains the whole Agreement state program and how 3 NY agencies have different responsibilities. In most other areas of environmental regulation in New York, people turn first to the NYDEC. Since this situation is quite different it should be explained. Sandra Hinkel provided a brief but clear statement at the hearing on May 25th. From that statement we have selected the following as a possible introduction or preface to the Part 380 Regulations and what DOH does versus DEC. New York is an Agreement State under the federal Nuclear Regulatory Commission. Under this program the NRC relinquishes authority to states to regulate certain categories of radioactive materials. As an Agreement State, New York must maintain a radiation control program that is both adequate to protect public health and compatible with the regulatory program of the NRC. New York’s Agreement State program includes three agencies - DEC, New York State Department of Health, and New York City Department of Health and Mental Hygiene. The two health departments are responsible for issuing radioactive materials licenses, and DEC is responsible for controlling the use, release and disposal of radioactive material to the environment through permits. The Part 380 regulatory program implements most of DEC’s portion of New York’s Agreement State program. It is expected that most applicants would first have a license prior to seeking a permit.
2. **These regulations pose significant potential environmental impacts and should have been identified as a Type I action, requiring an environmental impact statement.** Collectively these regulations present serious concerns about the adequacy of future regulation of hazardous radioactive materials in the environment. We do not agree with the Negative Declaration given on the basis of only an Environmental Assessment Form. Exemptions and variances seriously undermine the regulatory plan for radioactive materials.

3. **Exemptions 380-3.4 (3.0 relates to permits)**
   The provision for exemptions related to air emissions should be deleted based on the following:
   a) A person seeking an exemption is not required to apply for a permit and document in writing how the public dose limit was calculated.
   b) The DEC can grant an exemption without a permit or written document approving the exemption and the accuracy of the calculation provided to justify the exemption. If approval is granted based on an incorrect emissions calculation, the problem could go unaddressed for years.
   c) There is no requirement for permittees to have a technically qualified person submitting technical documents such as dose calculations associated with a proposed exemption related to air emissions.
   d) The following provision does not appear to be incorporated into the Exemption provision:
      380-5.1 b) Constraint on airborne emissions to the individual member of the public likely to receive the highest dose, ALARA. The TEDE, total effective dose equivalent, will not exceed 10 millirems per year from these emissions.
   e) DEC expects the permittee to utilize the charts in 380-11.7 to ensure that no more than 10% of the values in this chart for air emissions can be emitted. The values here are provided in microcuries per milliliter of air. Based on Section 3.4 for Exemptions if the permittee shows its emissions do not exceed 10% of the Chart values, an exemption could be granted. However, this leaves out the provision above for the highest dose not to exceed 10 millirems per year. An applicant would have to do a dispersion analysis to meet ALARA for exposed populations.
f) Average emissions may not be adequate in urban areas where building air intakes are in close proximity to emission points.

The DEC should delete the exemption provision altogether and instead utilize a variance provision (380-3.5). However, a variance must be applied for in writing, and be fully documented in conjunction with a permit. This would allow for ongoing oversight of important conditions associated with the permit.

4. Under the Variance provision 3.5 a) the Department may, upon its own initiative...... grant a variance...... We recommend that variances only be granted with a written request and approval process in a permit—even if the Department made the recommendation for a variance on its own initiative. We expect that all variances from applicable regulations be documented in writing. The entire Variance section needs to specify limits to what might be permitted. Otherwise the variance provision is a loophole that is effectively deregulatory.

5. Under 380-4, Disposal is authorized via Transfer, decay in Storage, release to the environment, incineration, release to sanitary sewage and finally : disposal as authorized under 380-4.3. In this section very small quantities of lab, research wastes, tissues and animal bedding are allowed to be disposed without regard to radioactivity as long as records are kept. In other words very little disposal is authorized here.

6. However, the Department has not made clear its entire plan for disposal under Subpart 380-4 Disposal. It is critical that the Department make clear its intent regarding disposal. During this proceeding staff have repeatedly indicated that there are no Low Level Radioactive Waste disposal facilities in the state. However, New York has many radioactive sites, and many still need remediation. There is an orphan Superfund site in Queens. New York has more Manhattan Project sites than any other state and Western NY has more than the rest of the state. Radioactive waste from the Maine Yankee nuclear reactor decommissioning and from the Los Alamos nuclear weapons site have also been buried in Western NY at sites that are not licensed for nuclear waste. How many radioactive sites are still in need of remediation? How many pose unacceptable future risks if not cleaned up in the near future? An example is the State Disposal Area at the West Valley nuclear waste site. That facility has a Part 380 Permit, although it is still under a consent order and currently needs to complete
a Full Corrective Measures Study. It poses a clear threat to the Great Lakes and the drinking water for millions of people from the loss of radioactive containment. These lessons from the past must guide any new efforts to regulate radioactive materials.

At present the DEC appears to be advancing a deregulatory proposal for disposal. If the Department wants to plan for Disposal for radioactive materials within the State it should be encompassed under Section 380-4, NOT permitted through a loophole under Variances, which seems to allow the Department to make a decision without even a written application under 3.5 a) the Department’s own initiative. **Under 3.5 Variances d) DEC discloses that a disposal permit may not even be required--- only when needed.** We are very concerned about the implications of such large loopholes.

**Disposal by Variance 3.5 c) & d)** We can see no rationale for a blanket variance from compliance with 380-4 of this part specifically related to disposal. Why did DEC severely limit disposal under 4.3 and then insert an alternative disposal plan that can be implemented via a variance? At the same time DEC has been stating that there is no Low Level Radioactive Waste facility in the state and that disposal is being prohibited. This looks more like widespread distribution of radioactive waste across the state thru variances. Why is DEC not requiring a permit application for disposal rather than suggesting an alternate route of applying for a variance. None of this deregulation was identified as necessary for compatibility with the NRC Agreement state program.

DEC has also provided no specific details associated with variances that would limit or constrain potential environmental impacts associated with disposal. Such details might have characterized DEC’s intent to ensure strict environmental standards regarding all rad waste disposal. However, those details and standards are not present. In the absence of strict limitation on how variances are to be used, we have termed these as “blanket variances” (similar to a blank check).

These regulations also only define TENORM without having any specific regulation of this material. TENORM associated with oil and gas development is under current law unregulated. This material represents massive quantities of
material going to landfills in the state and subject to radioactive leakage from incoming haul trucks, poorly installed or damaged landfill and storage pond liners, in addition to stormwater runoff. In some New York landfills with a history of disposal of these materials the radium concentration in landfill leachate has reached multiples of natural background levels. Since radium is not removed by sewage or leachate treatment plants, the full amount of radium is discharged to New York waters. Radium is bioaccumulative in fish and does not decay for thousands of years. Radium thus impacts these waterbodies, their best usage classification and the health of people that eat fish or receive any drinking water from these waters. This issue is also relevant for releases to public sewers.

The proposed regulations are silent on how TENORM, the concentrated or enhanced radioactive material associated with oil and gas development will be regulated in the future. As a consequence we are concerned that this “Blanket” Variance has a specific purpose, possibly for TENORM.

We recommend a new section in the regulations that discusses how you will screen for the potential that TENORM is being handled and possibly disposed of improperly. We need to know how this material will be regulated to protect public health.

There is also no mention of recordkeeping under variances. Does the DEC plan to keep a list of variances and what the variances were granted for, given that there may not even be an associated permit?

We understand that variances apply to many situations not just to TENORM discussed here. We recommend that all variances be documented in a permit in order to have a meaningful paper trail regarding regulatory activity for hazardous materials including radioactive substances. Proposed permits with variances should be noticed to the public with an opportunity to comment before final decisions.

We also recommend a more protective public policy be developed around variances associated with radioactive materials. To that end we recommend significant public participation in development of a more robust and protective variance policy.
7. All relevant permits must apply to each type of disposal – for example incineration and air releases require compliance with air permitting-Parts 201, 219, 212 and likely 231 for non-attainment areas.

8. The provisions for releases to Sanitary Sewer facilities are problematic. For example DEC allows releases to sanitary sewage as long as monthly concentrations do not exceed concentrations in the Table 11.7. This means that all a permittee has to do is dilute the radioactive discharge with water. The annual limit of 1 curie per year for all radionuclides except for tritium and Carbon-14 is far too excessive for some radionuclides. For example, the drinking water limit for Strontium-90 is 4 picocuries per liter. A picocurie is one trillionth of a curie. So releasing 1 curie of Strontium-90 to a sanitary sewer could be reckless in the extreme. This is particularly the case where small Sewage Treatment plants discharge to small waterways where drinking water intakes are downstream. Drought could worsen this situation by concentrating the dose of radionuclides. The DEC dilution solution will not help the situation with Strontium and likely other radionuclides of high public health significance. This should include assessment for those radioactive materials that merely pass through sewage treatment plants. We recommend that DEC require much more analysis and documentation in relation to achieving ALARA in order to protect public health, including use of Section 380-7 Release Minimization programs.

9. Other doses allowed for the public are unacceptable—100 millirems in a year, which excludes any contribution from releases to sanitary sewers. Actual public dose could be higher if sewage was included. These doses were established by NRC using the reference man—not women and children who are more sensitive to radiation effects. Radiation is a known human carcinogen, and it damages DNA and causes birth defects. It affects many body organs and systems in multiple ways, such as weakening our immune system. Recently negotiators on the United Nations Nuclear Ban Treaty added language reflecting the greater sensitivity of women and children to radiation. The public includes women, children and developing fetuses. These groups are far more sensitive to radiation including birth defects. There is no mention of the usually applied additional safety factors for these populations. Women should have an additional safety factor of 10. Fetuses and children should have an additional safety factor of 100.
10. **Recommend explicit requirement for how ALARA must be demonstrated.**

DEC described at the public accessibility session that the ALARA program in NY is implemented by requiring permittees to demonstrate their program meets ALARA objectives. We urge the Department to be more explicit in the regulations so that it is very clear what is expected in an ALARA demonstration by the permittee.

11. **Doses in Unrestricted Areas.** The dose for an unrestricted area is 2 millirems per hour. This means in 5 hours a person could receive the equivalent of a chest X-ray. Why should an unrestricted area be delivering this much radiation? --almost 50 millirems in 24 hours, when radiation surveys need to show that doses do not exceed 50 millirems in a year [(380-5.2 b) 2] (ii)]. The definition for an unrestricted area is one in which access is not limited or controlled by the licensee. We fail to understand why such high doses are to be allowed in an area with unrestricted access. It would seem to be preferable to restrict the use of such an area—to make it a restricted area.

There is also no definition for **external source** in these regulations. Based on its usage by DEC it appears to mean a source external to an individual. However, when used in the context of radiation it could mean external to the human body versus internal doses of radiation received through inhalation or ingestion. We would need to count inhalation and ingestion exposures for a person spending time in an unrestricted area as internal doses.

12. **The Charts in Subpart 380-11 are a problem in that there are no references as to the origin of the Charts.** We checked with NRC, and the reference is to 10 CFR 20 in 1991, 26 years ago. NRC’s Appendix B provides more information about the safety factors used by NRC, than do the DEC charts. Note that a factor of only two for deriving a child dose from an adult dose is not considered protective for any other toxin. We recommend using the actual NRC explanatory information in the DEC charts.


13. **Facilities.** DEC indicates that it will only be permitting PERSONS, not facilities. However, a permittee should be connected to the facility that he/she is operating. This change suggests that it wouldn’t matter where the permittee operates or
how adequate a particular facility is for the permitted activity. We urge that the
DEC continue to collect adequate information describing all facilities, legally
responsible parties, day to day managers, and other personnel, especially
technically qualified personnel, who should sign permit applications and other
technical reports. The connection between permittees and facilities should be
maintained.

14. **Qualified Technical Persons** should be a required element. These regulations
deleted the definition of a Radiation Safety Officer. In addition, multiple
components of these regulations require specific technical knowledge such as
radiation surveys, dose calculations for releases and reports to DEC. Without the
requirement for a qualified technical person to prepare and sign off on such
work, DEC will not have adequate assurance regarding potential health impacts.
We believe it is essential to require the signature of a technically qualified
person.

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**Specific Issues**

15. **USE versus release and disposal.** The department wavers throughout between
including the term “use” of radioactive material and excluding it and referring
only to release and disposal. We prefer that DEC regulate “use” as well.

16. **Immediately in Section 380-1.1 Purpose** b) This section is talking about disposal
and release but only related to licensed and unlicensed. There is no mention at all
of Permits from DEC

17. **Section 1.2 Applicability** covers primarily licensed material and licensing
agencies. There is an enormous list of who this section does not apply to. We
recommend listing who this regulation applies to first, then who it does not
apply to. Also covers exemptions for DOE, NRC or its contractors. There is no
mention of permits. We recommend the term licensed **radioactive** material rather
than just licensed material to avoid confusion.
18. **There is a conflict between 1.2 f) and h).**

   Item f) does not apply to a person subject to NRC or DOE regulation. However, h) applies to any person who owns or maintains a site containing buried radioactive waste. West Valley property is owned by NYS but the site is subject to NRC and DOE regulation. We agree that NY’s ownership gives it unique rights in final decisions regarding West Valley property and for that reason we don’t recommend a change to this apparent conflict.

19. **380-1.3 Communications.** Why should persons regulated primarily by NYS DOH or NYC DOH as licensees under 1.3 Communications make reports to DEC? Note that without the clarification at the beginning of these regs regarding the 2 licensing agencies and DEC, a licensed person may not be calling the correct Dept. We recommend being specific about when licensees should be calling DOH and when they should be calling DEC. Possibly all contact info should be provided. Please clarify whether only DEC should receive reports about incidents and spills.

20. **380-1.5 Transition.** Suddenly under 1.5 Transition we are discussing existing permits and those in violation. However, the stage was not set for Permits with DEC prior to this section.

**DEFINITIONS**

21. **Section on Definitions 380-2 Annual Limit on Intake.** There are multiple definitions related to occupational exposures. No use is made for them in the regulations. It is not clear why you are keeping them. We recommend putting all the occupational references together and identifying them clearly as occupational.

22. **“Background Radiation”** – The definition in the first sentence is appropriate. The second sentence lists only three types of nuclear material that are not considered background and relate to what NRC has turned over to states, like NY, for regulation as part of the Agreement state program. However, the definition leaves out other sources of radiation that are not considered background radiation: emissions from nuclear power plants and nuclear waste, nuclear weapons installations; and radiation associated with medical procedures.
23. “Class (or lung class or inhalation class) means a classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which applies to a range of clearance half-times: for Class D (Days) of less than 10 days, for Class W (Weeks) from 10 to 100 days, and for Class Y (Years) of greater than 100 days.” Please provide a reference for this. Lung Clearance is not complete and cannot apply to gases or very small particles because of absorption into the bloodstream which can deliver radioactive material to a vulnerable organ. This definition was not listed as required to be compatible with NRC definitions. Therefore DEC should correct the medical science.

24. “Disposal means the act of discarding material. Depositing or injecting radioactive material is disposal unless the radioactive material is being used in a scientific or other study, as authorized by a permit issued under 380-3.1 of this Part.” The definition of disposal should reflect the section on Disposal 380-4. The reference to injection as disposal is likely not acceptable for health professionals or patients. If this instead refers to deep well injection, there should be far more discussion in 380-4 because of the potential environmental implications.

25. Effluent Treatment. This definition excludes treatment prior to entering a duct or pipe for release. Since pre-treatment is common, there should be a definition for it.

26. Work with other States. We recommend some discussion of how NY works with the licensing agency of another Agreement State and the documents exchanged. It is important to know what happens to radioactive material when it is transferred.

27. Permit. We recommend putting USE first in the permit definition, then release and disposal.

28. Reference man—Recommend changing public health worker to public health “professional” and ADD “a typical man” to end of sentence. Also ADD sentence “When applied to women and children additional safety factors are used because of their increased vulnerability to radiation.”
29. **Release** means the introduction of radioactive material to environmental media—such as air, soil, and water.

30. **Restricted Area**—add to 2nd Sentence -- as long as evaluation for radiation exposures has been satisfactory.

31. **Survey** – since there are other types of Surveys. We recommend **Radiation** Survey here.

32. **Uncontrolled release** means a release of radioactive material to the environment as a result of a variety of events including failure to secure radioactive material, equipment failure, human error, or a severe event, such as fire, flood or storm.

**Permit Requirements**

33. **Section 380-3.1 Permit Requirements**
   The DEC has been inconsistent around the issue of USE Of radioactive material throughout these new regulations—sometimes including, and sometimes not. We believe all those who use, handle or manage radioactive materials should have a license or permit. They have a potential to release radioactive materials. DEC only needs to define who is regulated by the Health Departments under a license and who is regulated by DEC under a permit.
   Item 3.1 a) 5) recommend using, handling or managing radioactive material in a manner that may result in the release of radioactive material in the environment.

34. **Section 380-3.2 Recommendation**
   c) a complete application for a permit must;
   - ADD new 1) thoroughly describe the proposed action to use, handle and manage radioactive materials including:
   - All items 1)-4) from under e) p. 22
   - Insert existing number 1) as 2) contain information thoroughly describing emissions, release or disposal of radioactive materials
   - New e) the person preparing the technical aspects of the radioactive materials application must certify the accuracy of information provided in the application by signing it along with the person applying for the permit.
35. **380-4.4 Compliance with environmental and health protection regulations.**

Here the DEC references the applicability of toxic and hazardous materials that may be disposed of and references other applicable federal, state and local regulations.

In reviewing this regulation, we became aware that DEC had not complied with State Law, ECL 37, pertaining to listing hazardous substances. State Law required the preparation of a hazardous substance list and all those on the federal CERCLA Hazardous Substance list were required to be on the State list. This issue should be corrected as soon as possible. In relation to Part 380 and radioactive materials there are a long list of radionuclides on the CERCLA list with required reporting for spills to an EPA hotline, in addition to DEC.

36. **Under 380-5.2 b)** We recommend adding RADIATION to Surveys here

37. **Annual surveys** may be OK for permittees operating with relatively low doses for workers and the public (well below the doses the DEC is allowing). However, some consideration should be given to whether high dose excursions within the year are adequately protective, even though annual averages remain in compliance.

38. **Tables or Charts in Section 11.** There are inadequate notations on this table to explain the abbreviations, the reference to other radionuclides and the health effect selected as the principal concern.

39. **380-6 The title of this section should be Radiation Monitoring and Surveys.**

There are many types of surveys. Unfortunately, DEC leaves out monitors and monitoring in section 6.1 until it talks about calibration of instruments. Monitoring requires use of equipment that is appropriate for the task and reliably accurate with calibration. It is a mistake to eliminate the word monitoring here and focus only on the survey. Under section 5.2 DEC is talking about an annual survey, which we think is very different from ongoing monitoring of operations by a permittee. A radiation survey requires an overall plan to ensure that monitoring includes all points in the permittee’s process where radioactive materials are present or where emissions or releases may be
found. The survey is the more formal permit requirement. However, DEC should expect that permittees are regularly monitoring their operations. The focus only on complying with annual survey requirements is inappropriate here. We believe DEC wants a permittee to do regular monitoring to catch a small leak before it worsens, to review the inventory regularly and identify incompatible storage and other problems.

40. **380-8 Records.** Under 8.1 d), retaining records for only 3 years is grossly inadequate. With such a short term DEC will not know whether material was actually transferred (for example) or dumped somewhere. We recommend a longer time period. Three years also makes no sense in relation to Section 8.5 where DEC asks that disposal records authorized before 1985 be maintained. (that represents 30 + years)

41. **8.1 d)** Here licensing agency and license are mentioned. The DEC needs to review the entire regulation for the words license and licensing agency and make sure that permittee and DEC are also included. It is very difficult to understand whether DEC is purposefully leaving itself out of portions of these regulations and therefore will have no role in recordkeeping.

42. **8.7 Transfer of Permit.** Recommend “If the permittee has notified the DEC and transferred the permit pursuant to Part 621, the permittee must transfer all records…..”

43. **380-9.1 Annual Reports** Do you want licensees to report to DEC?

**380-9.2 Notification of Incidents**

a) Immediate Report. This statement must require and encourage immediate reporting. To that end, the Department should remove the qualifying language that obstructs the primary purpose— “after the discovery of an event that prevents immediate protective actions necessary to avoid an uncontrolled release of radioactive material to the environment from occurring…."

The purpose is to get an immediate report of what happened and some details. The qualifier obstructs that purpose by asking the person to figure out details about what protective actions could have been taken. In addition, in most instances even after an event has occurred, additional actions can be taken to mitigate the release or protect affected persons.
44. **380-9.3 Contents of Reports**

   a) Telephoned (Immediate) Reports. Recommended Additions:

   1) Caller’s name and **job title**, and call back telephone number

   2) Names of Responsible persons at site handling event or who were called (associated with permit)

   3) Whether additional assistance was called for from any emergency responders—police, fire, ambulance

   4) Any persons affected or injured by incident

   5) Other reporting to other agencies such as under CERCLA for reportable quantities or listed radionuclides.

   b) Interim Reports are advisable before the 30 day report. We recommend the addition of an interim report. If material has been stolen there must be follow-up with police and homeland security possibly. The Department or EPA’s hotline may have provided follow-up instructions on the incident. It may take longer for a written report that covers everything, but there should be some interim report between DEC and the permittee that enables a more complete review of the incident and whether any immediate additional follow-up needs to be implemented.

45. **380-10.2 a) Enforcement.** Here we have the continued inconsistency in not talking about the USE of radioactive materials—but just disposing and releasing. As a practical matter it seems far too easy to say as an applicant we are not disposing or releasing—when later on they actually do. Better that they are known as using with a potential for releasing.

46. **380-10.4 Vacating premises.** We recommend notice no less than 60 days to give time for the Department to assess what remediation may be necessary.

47. **Occupational Exposures.** It is not at all clear why you are covering Occupational Exposures at all. There are no regulations that address worker exposures. Who is enforcing occupational limits? Or are these references just so DEC can ensure that inspections don’t unnecessarily expose DEC employees?
Thank you for your attention. Please feel free to contact B. Warren for any questions, 845-754-7951, or warrenba@msn.com

Respectfully,

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