

Assessment of Public Comment
Comments Received on Proposed Amendments to 6 NYCRR Part 380
Prevention and Control of Environmental Pollution by Radioactive Materials

Below are the New York State Department of Environmental Conservation’s (DEC) responses to comments submitted by the public regarding the adoption of amendments to 6 NYCRR Part 380. This rule making was proposed on April 5, 2017 with Notice of Proposed Rule Making published in the *State Register* and an announcement posted in DEC’s *Environmental Notice Bulletin*. This included a 90 calendar day public comment period that ended on July 5, 2017, which was an additional 30 days beyond the initial 60-day comment period due to requests received from the public to extend the comment period. A legislative public hearing was held on May 25, 2017 in Albany with a public availability session held prior to the hearing. Oral comments were received during the hearing by one speaker and subsequently 99 commenters submitted written submissions (hard copy and electronic) by the July 5, 2017 public comment period deadline.

Commenter	Specific Comments	Response
1	1-Reclassify all fracking waste now classified as NORM as TENORM.	<p>Response 1-1: Waste containing naturally-occurring radioactive material (NORM) that has been processed and concentrated – meaning it contains levels of radioactive material that have been substantially increased due to human actions – continues to be regulated radioactive waste under 6 NYCRR Part 380, per paragraph 380-1.2(e). Such regulated radioactive material is also commonly referred to as technologically-enhanced NORM (TENORM). Waste containing NORM in natural isotopic abundance – meaning it does not contain elevated levels of radioactive material due to human actions - is not regulated waste under Part 380. Drilling waste (i.e., cuttings) contains NORM in natural isotope abundance – meaning it has not been processed and concentrated; for this reason, drilling waste is not regulated by Part 380, because such waste does not contain elevated levels of radioactive material resulting from processing. It would be inappropriate to re-classify waste containing NORM as TENORM when the waste does not exhibit elevated levels of radioactivity.</p> <p>DEC regulations at 6 NYCRR Parts 360 and 363 apply to landfills. Waste containing NORM is not prohibited from disposal in landfills in New York State (NYS). However, Part 363 prohibits the disposal of waste containing elevated levels of radioactivity, consistent with Part 380 requirements. Hence, waste containing elevated levels of radioactivity, including TENORM, is prohibited from disposal in a Part 363 landfill. Landfill operations are subject to regulation by Part 360, et. seq. and the conditions of a DEC-issued permit, which includes the use of radiation detectors to prevent the disposal of prohibited waste, such as TENORM.</p>

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		<p>Wastes from the drilling and development of oil and gas wells subject to hydraulic fracturing fall into three general categories: drilling waste, completion waste, and production waste. NORM present in drilling waste, such as drill cuttings, is not concentrated by the drilling process, is not TENORM, and is accepted for disposal in Part 363 landfills. Wastes resulting from the completion of a well, however, may contain elevated concentrations of NORM from the interaction of some injected completion fluids with certain rock formations. These liquids when flowed back to the surface are classified as flowback water or flowback fluid, and the TENORM waste generated during the treatment of these liquids, is subject to Part 380 and is prohibited by Part 363 from disposal at landfills in NYS. Production brine, defined in Part 360, may be used in certain applications pursuant to a beneficial use determination; however, as a bulk liquid, production brine is also prohibited from landfill disposal pursuant to Part 363.</p>
1	2-Define the term “processed and concentrated.”	<p>Response 1-2: The terms “processed” and “concentrated” are not specifically defined in the regulations. Therefore, the terms are accorded their ordinary meaning. However, language has been added to the definition of TENORM to clarify that TENORM can be produced during the process of manufacturing or water processing.</p>
1	3-Apply the definition of TENORM to all the natural gas coming out of fracked Pennsylvania wells.	<p>Response 1-3: It would not be appropriate to classify natural gas, from any source, as TENORM; natural gas contains radon, which is NORM. Environmental releases of NORM such as radon are not subject to Part 380. Although the concentration of radon in natural gas can vary, depending on the source, radon levels in natural gas have not been found to exist in significant concentrations, and do not result in elevated indoor radon levels. Also, see Response 1-1.</p>
1	4-Gas from the Marcellus and Utica shale in Pennsylvania can be 30 times the mitigation level recommended by the United States Environmental Protection Agency (EPA).	<p>Response 1-4: Many comments were received concerning the risk of radon exposure associated with in-home burning of natural gas originating from the Marcellus shale, and requesting that Part 380 regulate radon in natural gas. Radon gas is a naturally-occurring radioactive material (NORM) produced by the radioactive decay of radium-226. The half-life of radon is 3.8 days. The daughter products of radon include polonium-218 (half-life 3 minutes), lead-214 (half-life 27 minutes), bismuth-214 (half-life 19.7 minutes) and polonium-214, which quickly decays to stable non-radioactive lead. Part 380 regulates NORM that has been processed and concentrated (aka TENORM). Radon gas present in natural gas is not TENORM, and is therefore not a regulated radioactive material. Most radon in homes comes</p>

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		<p>from radon in the soil (EPA, 2014). Almost all risk from radon comes from breathing air containing radon and its decay products.</p> <p>Nonetheless, potential exposure to radon from natural gas has been extensively evaluated. Please refer to discussions about radon in the DEC FSGEIS on the Oil, Gas and Solution Mining Program, Volume 2, Response to Comments (May 2015); the Federal Energy Regulatory Commission (FERC) Final Environmental Impact Statement (FEIS) for Algonquin Incremental Market Project (January 2015); DEC Response to Public Comments on Permit Application for the Algonquin Incremental Market Project (May 2015); and the FERC FEIS for PennEast Pipeline Project, Vol 1, Response to Comments (April 2017). A summary of those findings is provided below:</p> <p>Radon can be entrained in fossil fuels including natural gas. Because radon is not destroyed by combustion, burning natural gas containing radon could potentially increase the level of radon within a home (Agency for Toxic Substances and Disease Registry, 2010). A screening analysis presented in the New York State Department of Health (NYSDOH) Public Health Review suggests that radon exposure levels from Marcellus Shale natural gas could contribute a small fraction to the overall indoor radon levels. The NYSDOH Public Health Review used EPA data that bounded the highest levels seen in the Marcellus Shale to date, and based on that data, concluded that significant radon impacts are not expected to end users. The contribution of natural gas appliance use to the total concentration of radon in homes is expected to be very low. EPA and Oak Ridge National Laboratory estimates of radon exposure due to the use of natural gas in homes suggest that this is a very small contributor compared to soil gas. An EPA report estimates that radon in natural gas used in an unvented kitchen range would not significantly increase the concentration of indoor radon. Typical vented gas appliances would contribute even less to indoor radon levels.</p> <p>Several factors limit the indoor exposure to radon from natural gas. Radon’s half-life, defined as the time it takes for the element to decay to half its initial concentration, is relatively short (3.8 days). The time needed to gather, process, store, and deliver natural gas allows a portion of the entrained radon to decay, which decreases the amount of radon in</p>

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		<p>the gas before it is used in a residence. Additionally, radon concentrations are reduced when a natural gas stream undergoes upstream processing to remove liquefied petroleum gas. Processing can remove an estimated 30 to 75 percent of the radon from natural gas (Johnson et al., 1973). Other research suggests that the cumulative decay of radon from wellhead to burner tip is around 60 percent (Gogolak, 1980). Also, radon exposure associated with the combustion of natural gas may be lower now due to the improved ventilation and increased energy efficiency of modern boilers, furnaces, and hot water heaters, as well as new building codes requiring venting of gas-fired stoves and ovens. Based on all available studies, the risk of exposure to radon is not significant.</p> <p>EPA identifies the average outdoor radon levels at about 0.4 picocuries per liter (pCi/L); indoor radon levels ranges from less than 1 to about 3,000 pCi/L. EPA identifies that the average indoor radon level is 1.3 pCi/l, and recommends that indoor levels be less than 4 pCi/L.</p> <p>In early 2012, a paper raised concern regarding radon levels in natural gas from the Marcellus shale (Resnikoff, 2012). This paper used theoretical calculations to estimate that radon concentrations in Marcellus shale natural gas range between 36.9 and 2,576 pCi/L, with a resulting estimated concentrations in the home of 0.0187 to 0.482 pCi/L. However, a subsequent study by the US Geological survey (USGS) found that concentrations of radon in natural gas samples from the Marcellus shale were not higher than natural gas extracted from other parts of the US. The USGS study found that concentrations of radon in natural gas samples from the Marcellus shale, as measured in the wellhead, ranged from 1 to 79 pCi/L and 7 to 65 pCi/l, respectively (Rowan and Kraemer, 2012). The concentration of radon would then be further diluted in household air. In July 2012, a study of natural gas samples from several pipelines from the Marcellus shale gas fields (Anspaugh, 2012) showed that the resulting in-home predicted concentrations of radon would be significantly less than average indoor and outdoor radon levels and thus does not pose a health hazard to end users. That study presented measured radon concentrations in natural gas pipelines ranging from 16.9 to 44.1 pCi/L, with resulting in-home concentrations estimated at 0.0042 to 0.0109 pCi/L.</p>

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		These levels of radon in interstate pipelines carrying gas from the Marcellus shale are below the average indoor and outdoor radon levels.
2	1- We support environmental protection, and the proposed rule provides a reasonable balance between environmental protection and the ability to execute work.	Response 2-1: Comment noted.
3	1- No fracking waste in any form in NYS.	Response 3-1: See Response 1-1.
4	1- Regulate fracking waste.	Response 4-1: Drilling and production wastes are regulated under Part 360, et. seq. Any TENORM in drilling and production waste, such as the processing and treatment of flowback water, would be regulated by Part 380. See Response 1-1.
5	1-Reclassify fracking waste as TENORM so that it can be regulated.	Response 5-1: See Responses 1-1 and 4-1.
6	1- Drilling waste should not be considered NORM; all radioactive drilling waste should be considered TENORM.	Response 6-1: See Responses 1-1 and 4-1.
6	2- All hydrofracking waste, including radon and drill cuttings, should be labeled as TENORM.	Response 6-2: See Responses 1-1, 1-3, and 4-1.
6	3- Dose limits are not acceptable and must be reduced.	Response 6-3: The 100 millirem (mrem) public dose limit in the Part 380 regulations have not changed, other than the addition of a 10 mrem dose constraint for radioactive emissions. The public radiation dose limits in Part 380 are consistent with federal standards, which are protective of public health and the environment. As explained in the Regulatory Impact Statement (RIS) issued in support of the proposed amendment, as an Agreement State, New York cannot set dose limits which differ from those established by the US Nuclear Regulatory Commission (NRC) in 10 CFR 20. Public dose limits are based on international and national guidance from organizations such as the International Commission of Radiological Protection and the National Council on Radiation Protection.
6	4-The DEC definition of TENORM does not take into account the buildup of radioactivity in pipes.	Response 6-4: The buildup of NORM in oil and gas system infrastructure has long been recognized as processed and concentrated NORM (aka TENORM); the disposal of such radioactive waste has always been subject to regulation under Part 380. The issues of identifying and licensing TENORM in system infrastructure by NYSDOH to protect workers, and disposing of such TENORM waste, was extensively addressed in the May 2015 Final

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		Supplementary Generic Environmental Impact Statement (FSGEIS) on the Oil, Gas, and Solution Mining Regulatory Program.
6	5-The escaping methane plumes from compressor stations are constantly emitting radioactive radon and daughter products causing continuous fallout on residents living nearby.	Response 6-5: Environmental releases of NORM such as radon are not subject to Part 380. However, the levels of radon and its decay products associated with the combustion of natural gas at compressor stations would be lower than at the wellhead. The levels of radon and its decay products would be further reduced due to upstream processing, natural decay, and efficiency of the turbines. Any radon in the compressor station emissions would be vented to the atmosphere and quickly diluted by mixing with the surrounding air. Public exposure to radon from compressor stations is not significant. Also, see Response 1-3.
6	6-Pennsylvania hydrofracked gas may exceed 150 pCi/l at the drill site. The transit time from the PA gas fields to NY may only be half a day, meaning users of fracked gas in NYS are exposed to radon levels many times higher than the EPA recommended level for mitigation.	Response 6-6: See Response 1-4.
6	7-Do not allow disposal by variance. At this time, NYS does not have low level radioactive waste disposal. Allowing variances would permit wide distribution of radioactive waste across NY.	Response 6-7: The variance provision in Section 380-3.5 describes the process for requesting a variance from specific provisions of Part 380. DEC is required to maintain the variance provision for compatibility with the federal NRC regulations in 10 CFR 20. The current language in this section is confusing in that it also refers to obtaining a permit to authorize the discharge of radioactive materials. The proposed amendment would: remove the reference to a permit, revise the description of information required in a variance request to ensure that relevant information is submitted, and allow DEC to initiate a variance. Variances may not be granted to simply avoid meeting existing waste disposal requirements. Waste disposal variance requests are only considered when unique waste management issues cannot be reasonably addressed through the existing waste disposal requirements. All requests must demonstrate that the requirements established in Section 380-3.5 will be met.
7	1-I support the regulation of TENORM. Reclassify fracking waste as TENORM so that it can be regulated.	Response 7-1: See Responses 1-1 and 4-1.
8	1-Supporting green, wind, and solar expansion.	Response 8-1: This is outside the scope of this regulation.

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9	1-Concerned about radioactive drill cuttings waste and Marcellus waste from Pennsylvania, gas drilling activities sent to NY landfills, need more regulations or banning of such.	Response 9-1: See Responses 1-1 and 4-1.
10	1-The proposed amendments to Part 380 are reasonable.	Response 10-1: Comment noted.
11	1-The regulations are confusing regarding licensing vs. permitting, and the agreement state program.	Response 11-1: A detailed explanation of DEC's statutory authority and New York's Agreement State program is provided in Section 1 of the Regulatory Impact Statement (RIS) issued in support of the proposed amendment.
11	2-The "use" of radioactive material will now be regulated, but such use is not incorporated everywhere that release and disposal are mentioned.	Response 11-2: Section 380-1.2, Applicability, states that the disposal or release of radioactive material within the State or the use of licensed radioactive material in the environment is regulated. As explained in Section 3 of the RIS, the amendment expands the applicability of Part 380 to include the use of radioactive material in the environment (e.g., in environmental studies) because such use is not currently specified in regulation as being subject to Part 380. Expanding the applicability closes a regulatory gap and authorizes DEC to issue permits for such use.
11	3-The regulations do not make clear that DEC is limiting its activities to only agreement state materials or to a broader set of radioactive material that might be disposed.	Response 11-3: Section 380-1.2, Applicability, states that Part 380 regulates the disposal or use of licensed material in the environment. Subpart 380-2.1, General Definitions, provides a detailed definition of licensed material, and explains that it is radioactive material subject to licensing and regulatory control by municipal, state, and federal agencies.
11	4-The facility must be fully described, and all responsible parties listed, including emergency numbers and technical or safety personnel. A technical person should sign applications and official reports.	Response 11-4: Section 380-3.2, Permit Applications, specifies the information that must be included in an application for a permit, including any supplemental information which DEC notifies the applicant is necessary to review the application. Such supplemental information includes permit application guidelines specific to the type of permit applied for. These guides require the identity and contact information for key technical personnel responsible for maintaining compliance with Part 380 and the conditions of the permit.
11	5-It is essential to identify the actual method of disposal, and records of disposal are important.	Response 11-5: Subpart 380-4, Waste Disposal, specifies authorized radioactive waste disposal methods, and Subpart 380-9 requires records be maintained of all waste disposed.
11	6- Incineration and air releases authorized by these regulations should also reference the appropriate air permits.	Response 11-6: Section 380-3.2, Permit Applications, specify that an application for a permit must satisfy the general requirement for complete applications contained in 6 NYCRR Part 621, Uniform Procedures, which requires the applicant to apply for any other required

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		<p>permit. Also, Part 380 permits issued for incinerators contain a condition cross-referencing the permittee’s Title V Facility Permit issued pursuant to 6 NYCRR Part 201.</p>
11	<p>7- The list of CERCLA hazardous substances that are radionuclides should be adopted.</p>	<p>Response 11-7: Adding the list of CERCLA hazardous substances that are radionuclides (listed in 40 CFR 302 Appendix B) to Part 380 is not within the scope of this rulemaking. Any changes to the list of hazardous substances would be made in the context of a rulemaking under 6 NYCRR Parts 596-599, Chemical Bulk Storage regulations. Moreover, adding the list to Part 380, as suggested, would result in a rule that is less protective of the environment, because the reportable quantities in Appendix B are significantly higher than the reporting levels in proposed Section 380-9.2.</p>
11	<p>8a-The definition of background radiation fails to say that background radiation does not include nuclear power plant radiation, nuclear waste installations, medical radiation tests, procedures, and research.</p> <p>8b- The definition of exposure is very technical and by implication indicates that if exposure is not measured, a person was not exposed.</p> <p>8c-The definition of disposal is offensive to health professionals – injecting radioactive materials is disposal!</p>	<p>Response 8a: Paragraph 380-2.1(a)(8) states that background radiation does not include radiation from source, byproduct, or special nuclear material regulated by the NRC, the State, or another agreement state, which covers all licensed facilities mentioned. Section 380-5.1, Dose Limits for Individual Members of the Public, states that public dose limits do not include dose contributions from any medical administration that individual has received.</p> <p>Response 8b: Subdivision 380-5.2(a) requires surveys of radiation levels in unrestricted areas of the environment and surveys of radioactive materials in effluents released to unrestricted areas in the environment to demonstrate compliance with the public dose limits in Section 380-5.1.</p> <p>Response 8c: DEC disagrees that administration of radioactive material would constitute disposal. However, the words “in the environment” have been added to the definition of disposal in paragraph 380-2.1(a)(20) to clarify that depositing or injecting radioactive materials in the environment is disposal.</p>
11	<p>9- These regulations should not have received a negative declaration. They allow unacceptable levels of exposure to the public as follows:</p> <p>9a- allowable releases to sanitary sewerage,</p>	<p>Response 9: The public dose limits in the proposed amendment have not changed, other than to add a 10 mrem dose constraint for air emissions. Also, see Response 6-3.</p> <p>Response 9a: The limits for releases to sanitary sewerage in the proposed amendment have not changed, and are consistent with those established by the NRC.</p>

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	<p>9b- no description of when TENORM becomes subject to regulatory control,</p> <p>9c- an exemption from permits in Section 380-3.4,</p> <p>9d- the elimination of the definition of radiation safety officer or any requirement for a qualified person to prepare radiation surveys or other technical materials, and</p> <p>9e- the public dose limit of 100 mrem a year and 2 mrem per hour are unacceptable.</p>	<p>Response 9b: The point at which processed and concentrated NORM becomes regulated radioactive material has never been prescribed in the regulations in order to preserve flexibility to allow DEC to make such determinations on a case-by-case basis, because there are a multitude of possible ways for the generation of TENORM to occur.</p> <p>Response 9c: the referenced exemption has not changed. The exemption establishes the emission threshold below which a permit is not needed, a very low threshold (less than ten percent of the Table II concentration values, without relying on effluent treatment). Subparts 380-6 and 380-8 require persons meeting the exemption to survey emission and record emission data to demonstrate that the exemption continues to be met.</p> <p>Response 9d: The definition of radiation safety officer was deleted because DEC is not the agency authorized to make the determination whether or not the person proposed to function in this position is qualified to do so; that determination is made by the radioactive materials licensing agency. Also, see Response 11-4.</p> <p>Response 9e: See Response 6-3.</p>
12	1-The proposed amendment reflect best practices for the monitoring, control, and reporting of environmental radiation discharges and exposures, without imposing any unreasonable financial burden or oversight; adoption endorsed.	Response 12-1: Comment noted.
13	1-The change in language in Section 380-1.2(f), shifting the regulatory focus from “person” to the “disposal or release” suggest that an NRC’s licensee’s radiological releases could now be subject to Part 380.	Response 13-1: Part 380 does not apply to NRC licensees. All radiological activities undertaken by NRC licensees – including disposals and releases, are subject to regulation by NRC. As Section 380-1.2(a) states, Part 380 applies to the release, disposal, or use of licensed material in the environment, and Section 380-1.2(f) continues to clarify that Part 380 does not apply when such activities are subject to regulation by the NRC. Also, as explained in section 7 of the RIS, the federal 10 CFR regulations apply to NRC-licensed facilities such as nuclear reactors, while Part 380 applies to state-regulated facilities. Throughout the proposed rule, language has been revised to clarify that the person

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		conducting the regulated action is subject to Part 380; this language change was made for consistency with overall DEC policy.
13	2-Concerned that the proposed amendment would allow the Department to consider historic discharges of radiological releases authorized under NRC’s regulations to be subject to Part 380, and form the basis of an enforcement action. The term “release” is broad enough to include migration in any environmental media, and the phrase “licensed radioactive material” has been deleted from the explanation that radiation from licensed sources are not included in the definition of background radiation. The net effect of these changes in language could be to extend New York State’s regulatory reach to the current movement or migration (e.g., in groundwater or from groundwater to surface water) of radiological materials, even where the discharge or release either was previously authorized by NRC or is currently subject to NRC regulation. It appears the Department may be attempting to assert jurisdiction with respect to discharges, releases, or emissions at or from NRC-licensed facilities. Suggest the existing exemption from Part 380 for NRC licensees remain intact to avoid ambiguity.	<p>Response 13-2: DEC does not seek to assert jurisdiction over NRC-regulated activities at NRC-licensed facilities. Minor language changes made in the definition of background radiation were required for compatibility with NRC rules. The existing exemption from Part 380 for NRC licensees continues in Section 380-1.2(f). Also, see Response 13-1.</p> <p>However, DEC’s long-standing position is that if NRC-regulated releases were ever to result in off-site concentrations in environmental media in exceedance of State environmental standards for radiological constituents (such as groundwater standards), then those exceedances would be subject to the relevant State environmental regulations.</p>
13	3- The proposed amendment adds the new term “uncontrolled release;” these newly-defined uncontrolled releases are expressly prohibited by 380-10.9(a). The effect is to proscribe, as a matter of New York law, releases which fall within NRC-authorized limits.	Response 13-3: See Responses 13-1 and 13-2.

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13	4-The proposed new Section 380-1.2(h) states that Part 380 applies to any person who owns or maintains a site containing buried radioactive waste. It is ambiguous as to which persons this new provision is intended to apply. Clarification is needed regarding the activities intended to be regulated under this provision. To the extent that NRC may allow its licensees to bury radioactive waste as part of decommissioning, such activities should continue to be exempt from Part 380. Retention of the existing language providing an express exemption of NRC licensees from Part 380 would help to remedy any potential ambiguity with regards to decommissioning activities at NRC-licensed facilities.	<p>Response 13-4: As stated in Section 380-1.2, Applicability, Part 380 applies to the disposal of licensed material within the State, but does not apply to disposals subject to regulation by the NRC. As explained in Section 3 of the RIS, a paragraph has been added to clarify that sites containing buried radioactive waste are subject to Part 380. New paragraph 380-1.2(h) does not establish new regulatory controls; rather, it clarifies that such controls currently apply to existing burial sites, and will be useful should additional burial sites be discovered in the future. The existing exemption from Part 380 for NRC licensees continues unchanged in Section 380-1.2(f). To clarify what waste is regulated and what process will be followed if buried radioactive waste is discovered in the future, new paragraph 380-1.2(h) clarifies that Part 380 applies to any person who owns or maintains a site containing buried radioactive material. Also, see Responses 13-1 and 13-2.</p> <p>NRC historical practice regarding on-site disposal of radioactive materials by its licensees has been to seek concurrence from the Agreement State for that action, because once an NRC license is terminated, radiological regulatory authority over that site will revert to the Agreement State.</p>
13	5- The Indian Point Agreement settled the question of whether Indian Point’s historic and future releases of radioisotopes to groundwater and the Hudson River were subject to the Department’s authority. The ambiguities introduced by the proposed amendment, with respect to unplanned releases and certain, undefined releases by NRC licensees, suggest a possibly impermissible erosion of that Agreement. Such concerns can be addressed by retention of the existing exemption for NRC licensees.	Response 13-5: The proposed amendment does not affect the Indian Point Agreement. The existing exemption from Part 380 for NRC licensees continues unchanged in Section 380-1.2(f). Also, see Responses 13-1 and 13-2.
14	1-Adopt EPA’s definition of TENORM.	Response 14-1: Section 380-1.2(e) continues to regulate NORM that has been processed and concentrated, and now clarifies that such regulated radioactive material is commonly referred to as TENORM. The definition of TENORM being added as 380-2.1(a)(66) is not identical to EPA’s definition because EPA’s definition includes NORM that is exposed to the

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		accessible environment. DEC does not intend to adopt that portion of EPA’s definition of TENORM because it could be interpreted to include materials containing levels of NORM present in natural isotopic abundance. Part 380 does not regulate NORM in natural isotopic abundance. Instead, Part 380 regulates NORM when present in elevated concentrations due to human activity, because the presence of elevated levels of radioactivity could result in elevated radiation exposures to the public.
15	1- The proposed revisions would change the applicability of these regulations from “licensed radioactive material” to all “radioactive material” subject to this rule (which would include TENORM). The apparent expansion in scope from “licensed material” to the broader universe of “radioactive material” and the anticipated implications of such expansion, are not explained. This expansion should be withdrawn for lack of demonstrated justification and need, or incorporate an analysis of impacts in the Regulatory Impact Statement (RIS).	Response 15-1: The amendment does not broaden the scope of materials subject to regulation. As described in Section 380-1.1, Purpose, the regulation establishes standards for protection against ionizing radiation from the disposal and release of radioactive material to the environment. Although some language in Section 380-1.2, Applicability, was revised to improve clarity, the scope of applicability has not been expanded, other than the addition of use of radioactive materials in the environment. The regulation applies to the disposal or release of licensed material, the loss of control of licensed materials that may result in disposal or release of such material in the environment. The use of licensed radioactive material in the environment has been added to clarify existing regulatory authority, so that permits can be issued for such use. The regulation also continues to apply to the disposal or release of processed and concentrated NORM. Language was added to 380-1.2(e) to clarify that processed and concentrated NORM is also commonly referred to as TENORM; this clarification does not change or broaden the scope of this longstanding provision. Because Section 380-1.1 established regulatory applicability to licensed radioactive material and processed and concentrated NORM (i.e., TENORM), the redundant use of the term “licensed” was removed elsewhere throughout the regulation.
15	2-The intended applicability to TENORM is not entirely clear. Aside from Section 380-1.2(e) and the definition of TENORM in 380-2.1(a)(66), no other regulatory threshold levels or criteria are provided. The RIS states that the proposed amendments “expand the current criteria regarding when the disposal of processed and concentrated NORM (i.e., TENORM) becomes subject to	Response 15-2: The quoted phrase “expand the current criteria...” which appeared in the RIS inadvertently appeared due to an editing error.

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	regulatory control,” but not such criteria is included in the proposed amendment.	
15	3-Why was Article 37 of the ECL added to Section 380-1.1(a)?	Response 15-3: The statutory authority on which the existing Part 380 are based already included ECL Article 37, as shown in the heading of the existing regulations. Section 380-1.1(a) was simply modified to make all the references to statutory authority consistent. As explained in section 1 of the RIS, ECL section 37-0107 states that no person shall release to the environment substances hazardous to public health, safety, or the environment in contravention of regulations promulgated pursuant to Article 37. ECL section 37-0105 authorizes the Department to promulgate regulations pertaining to the release to the environment of substances hazardous to public health, safety, or the environment. Radioactive materials meet the statutory criteria of substances hazardous to the public health, safety, or the environment in ECL section 37-0103(1)(a).
15	4-Verify that there is no potential conflict or inconsistency between proposed 380-1.2(d) and (e).	Response 15-4: There is no conflict. Section 380-1.2(d) recognizes that radioactive material in certain forms and quantities are specifically exempt from general or specific licensing and regulatory control; these exemptions are detailed in the regulations issued by the referenced municipal, state, and federal radioactive material licensing agencies. Section 380-1.2(e) continues to regulate processed and concentrated NORM (aka TENORM).
15	5-Recommend that a sentence be added to 380-1.2(e) stating “This Part does not apply to NORM or materials containing NORM unless process and concentrated.”	Response 15-5: The suggested addition is not necessary. The language updates throughout the regulation serve to clarify that the regulation does not apply to NORM, and specifically apply to the person conducting the action of disposal or release, rather than to the material being disposed of or released to the environment.
15	6-No rationale is provided for limiting the exclusion in new 380-1.2(i)(3) to NORM with atomic numbers less than 92 (in any form and in natural isotopic abundance). Limiting this exclusion to atomic numbers less than 92 (i.e., no uranium) is not explained. Since radioactive tailings or wastes produced by the extraction or concentration of uranium or thorium from ore are already clearly subject to regulations under 380-1.2(b), it is recommended that proposed 380-1.2(i)(3) be	Response 15-6: Proposed paragraph 380-1.2(i)(3) has been removed. Upon further review, it was determined that the proposed provision is redundant, as the applicability of Part 380 to TENORM and not to NORM is already adequately addressed in paragraph 380-1.2(e).

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Commenter	Specific Comments	Response
	eliminated entirely as unnecessary, or that 380-1.2(i)(3) be revised to include atomic numbers less than or equal to 92, in any form and in natural isotope abundance.	
15	7 – To provide clarification, it is recommended that the following language be added to the proposed 380-1.2(h) regarding sites containing buried radioactive waste: “...other than waste containing NORM or other radioactive materials excluded from this Part under 380-1.2.”	Response 15-7: The suggested addition is not necessary. Applicability is clearly defined in Section 380-1.2. To clarify what waste is regulated and what process will be followed if buried radioactive waste is discovered in the future, new paragraph 380-1.2(h) clarifies that this regulation applies to any person who owns or maintains a site containing buried radioactive material.
15	8-It appears that a property owner would be in immediate non-compliance if radioactive waste was discovered buried on his/her property in the future, even if they were not the person responsible for disposing of it there.	Response 15-8: As indicated in the proposed transition rules at Section 380-1.5, the proposed regulation would apply prospectively to any person, who as a result of amendment of Part 380, would require a permit. The transition rules therefore must be read in conjunction with proposed Section 380-3.1, which specifies that a permit is required prior to emitting, discharging, incinerating, disposing or using radioactive material in the environment in a manner that results in the release of radioactive material to the environment. For persons who do not intend to manage previously buried radioactive material in a manner that requires a permit pursuant to Section 380-3.1, as amended, a permit would not be required. In other words, the DEC does not intend to regulate previously buried waste unless and until such time that disturbance of such waste triggers the need for a permit pursuant to Section 380-3.1.
15	9- A typo was identified in 380-1.3(b) – “makes” should be “make.”	Response 15-9: The typo has been corrected.
15	10- Since neither the permitting requirements in 380-3.1(a)(5) nor the definition of permit in 380-2.1(a)(47) limit the allowable uses of radioactive material in the environment to only “scientific or other study,” those should not be the only uses excluded from the definition of “disposal.” Any legitimate permitted “use” is not an act of discarding and should not be defined as “disposal.”	Response 15-10: DEC agrees. The phrase “in a scientific or other study” has been deleted from the definition of disposal in paragraph 380-2.1(a)(20).

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Commenter	Specific Comments	Response
15	11- Is there a need to keep the definition of NORM?	Response 15-11: There is no need to keep the definition of NORM, because the abbreviation “NORM” is not used in the regulation.
15	12- We support the proposed definition of TENORM which would appropriately limit the term to NORM in which radionuclide concentrations have been increased by human activities.	Response 15-12: Comment noted.
15	13- None of the background documents published in support of the proposed amendment acknowledge the increase in the scope of required permitting. Given that the requirements to obtain a permit for releases to air or water is proposed to expand from just “licensed material” to the broader universe of “radioactive material,” and the proposed additions to the list of activities requiring permits (i.e., incineration of radioactive material and the use of radioactive material in the environment) we request a discussion and analysis of this apparent expansion of permitting requirements be included in the RIS and an explanation of why DEC believes there will be no increase in associate permitting costs.	Response 15-13: As explained in Response 15-1, the proposed amendment does not expand the scope of material subject to regulation. The regulations continue to apply to licensed radioactive material and processed and concentrated NORM. As explained in Section 3 of the RIS, the permit requirements in Subpart 380-3 will identify each type of disposal or release that can only be taken when authorized by a permit. Permitting provisions in different parts of the current regulation have been consolidated into one place, Section 380-3. Incineration of radioactive material has always required a permit. Current Section 380-3.6, Treatment or Disposal by Incineration, is being repealed because this provision has been moved to Section 380-3.1. Hence, there is no change in costs, as explained in Section 4 of the RIS. The use of radioactive material in the environment has always been subject to regulation by Part 380, although that regulatory authority was not specifically articulated in the existing regulation; the specific requirement to obtain a permit was absent, a regulatory gap. New provision Section 380-3.1(a)(5) corrects this oversight by requiring a permit to authorize the use of radioactive materials in the environment that results in the release of radioactive material to the environment. As explained in Section 3 of the RIS, the definition of permit is being expanded to apply to the use of radioactive material in the environment, to close a regulatory gap.
15	14- Neither the permitting requirements in 380-3.1(a)(5) relating to the use of radioactive material nor the definition of permit in 380-2.1(a)(47) limit the types of allowable permitted use to only “studies,” so we recommend that 380-3.2(e)(4) be revised to replace the word “study” with “use.”	Response 15-14: Agreed. The suggested change has been made to 380-3.2(e)(4); the word “study” has been replaced with “use.”
15	15- The disposal requirements or options available for TENORM wastes are unclear. The RIS states that	Response 15-15: See Response 15-2.

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Commenter	Specific Comments	Response
	the proposed amendment expands the current criteria regarding when the disposal of processed and concentrated NORM become subject to regulatory control, but no such criteria are included in the proposed amendment.	
15	16- Recommend that proposed 380-5.1(b), Constraint on Airborne Emissions, be modified to only be applicable to the same types of radioactive material that are subject to 10 CFR 20, rather than to the broader scope of “radioactive material” subject to Part 380.	Response 15-16: DEC will apply the 10 mrem constraint to public doses due to emissions from all radioactive materials subject to regulation by Part 380.
15	17- Object to the proposed expansion in scope from “licensed materials” to all “radioactive materials” and question the need for a formal Release Minimization Program for the relatively low levels of radioactivity associated with materials such as TENORM that are not subject to licensing. We recommend that 380-7.1 be revised to limit the requirements applicable to Release Minimization Programs to licensed materials only.	Response 15-17: As explained in Response 15-1, the proposed amendment does not expand the scope of regulated material. The regulations continue to apply to licensed radioactive material and processed and concentrated NORM (aka TENORM). As explained in Section 380-7.1, the Release Minimization Program only applies to permit holders. Only those persons subject to Part 380 per Section 380-1.2 and discharge or release radioactive materials must obtain a permit per Section 380-3.1.
15	18- The examples of uncontrolled releases and the end of 380-9.2(a) are not entirely consistent with the definition of “uncontrolled releases” in 380-2.1(a)(67). We recommend the examples at the end of 380-9.2(a) be removed to avoid confusion.	Response 15-18: Agreed. The suggested change has been made to 380-9.2(a); the examples given have been deleted.
15	19- Given the natural variability of radioactivity in the environment, and uncertainties with regard to possible sources of “contamination” which may occur above background levels, we request that the criteria for triggering the notification requirement in proposed 380-9.2(b)(1) of “an unplanned	Response 15-19: The proposed provision is broadly worded so as to capture all unplanned contamination events that occur in the environment, and to required notification of all such events. After DEC has been notified of an event, the additional reporting that follows as required by proposed Section 380-9.3 will address details such as isotope and level of contamination. The proposed revision does not include a threshold to ensure that DEC will be made aware of all such incidents.

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Commenter	Specific Comments	Response
	contamination event” be fully clarified, by definition or by providing a minimum threshold of contamination.	
15	20- Recommend that the wording at the end of proposed 380-9.2(b)(2) “or to mitigate the consequences of an accident” be removed. If an equipment failure or disablement failed to “mitigate the consequences of an accident,” the other notification provisions in 380-9.2(b)(1)-(7) would ensure notification.	Response 15-20: Agreed. The last sentence of 380-9.2(b)(2) has been revised to delete the redundant phrase.
15	21- A new proposed 380-10.9(a) states “no person shall cause or allow an uncontrolled release, loss of control, transfer to an unauthorized person, or abandonment of radioactive material.” “Uncontrolled release” and “loss of control” incidents are often the result of accidents, equipment failure, or events beyond the control of the owner/operator. Including such events under “prohibitions” would mean the event itself could be considered a regulatory violation subject to enforcement action and penalties.	Response 15-21: DEC acknowledges that certain events, such as severe weather events, are not preventable and are beyond a person’s control. However, persons subject to Part 380 should take all reasonable steps to mitigate potential risks that could result in a prohibited event (e.g., secure radioactive materials, maintain equipment, follow approved procedures for disposal of radioactive waste, etc.). For this reason, proposed 380-10.9(a) states, “no person shall cause or allow...” thus indicating that deliberate actions or negligence which could result in such events are prohibited.
16	1 – Natural gas hydrates accumulate radioactive particles in pipelines, valves, engines, and saturating filters within the infrastructure; this concentrated material poses a threat to the health of workers, the public, and the environment. The existing system classifies this radioactivity as NORM and the failure to regulate its impact under Part 380 needs to be remedied. We urge DEC to adopt EPA’s definition of TENORM.	Response 16-1: See Responses 6-4 and 14-1.

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Commenter	Specific Comments	Response
16	2 – The Marcellus shale has perhaps the highest levels of radon of any shale in the country, in the range of 150 pCi/l at the wellhead; levels could be thirty or more times the EPA recommended level for mitigation. Further, DEC’s definition of TENORM is flawed, and should be brought in line with EPA’s.	Response 16-2: See Responses 1-3, 1-4, and 14-1.
16	3 – Radon in Marcellus gas poses major environmental and public health impacts that DEC must carefully assess. The DSGEIS needs to be withdrawn and revised to consider this public health and environmental hazard. DEC needs to revise its definition of NORM and TENORM.	Response 16-3: See Responses 1-3, 1-4, and 14-1.
16	4 – DEC is required by SEQRA to assess the potential impacts of the proposed changes to Part 380. The negative determination of significance dismisses radon from consideration as a pollutant requiring regulation. The proposed amendments to Part 380 require a full environmental impact statement.	<p>Response 16-4: The State Environmental Quality Review Act (SEQRA) was properly complied with for the proposed amendment to Part 380. There are no changes to standards regarding allowed disposals or releases of radioactive materials, or to public dose limits, other than the addition of a 10 mrem constraint. An additional environmental review is not required for this unlisted action, including the preparation of an environmental impact statement (EIS). DEC has assessed the potential impacts of the amendment, which does not change how radon is regulated. As NORM, radon continues to be regulated only when processed and concentrated.</p> <p>As explained in the Negative Declaration, DEC was unable to identify any areas of environmental concern as a result of this proposed amendment, as it will not result in any significant adverse environmental impacts to existing air quality, surface or groundwater quality, or have any effect on noise level, traffic patterns, or solid waste production. Similarly, no significant environmental impacts will result for those activities related to the adoption of the federal provisions for which DEC has no discretionary authority. Because this action does not have any direct or indirect effect on construction of any kind, this action will not have any significant impacts on aesthetic, agricultural, historic or other natural or cultural resources, or community character. There will be no short-term or cumulative impacts.</p>

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Commenter	Specific Comments	Response
		DEC has determined that a Negative Declaration was properly issued as this rulemaking will not cause any significant adverse impacts on the environment. Also, see Responses 1-3 and 1-4.
16	5 – Radon in PA gas delivered to New York gas-fired appliances could result in high indoor radon levels. EPA’s definition of TENORM should be adopted by DEC.	Response 16-5: See Responses 1-3 and 1-4.
16	6 – We ask DEC to assume regulation of radioactive discharges from natural gas infrastructure under the revised Part 380. We look to DEC to provide robust oversight of radon, polonium, and lead in Marcellus and Utica Shale gas.	Response 16-6: See Responses 1-3 and 1-4.
16	7 – Reclassify Marcellus gas and its radioactive discharges during transmission, from NORM to TENORM, so it would be regulated under Part 380.	Response 16-7: See Responses 1-3 and 1-4.
17	1 – Identical submission as Commenter 16-1.	Response 17-1: See Responses 6-4 and 14-1.
17	2 - Identical submission as Commenter 16-2.	Response 17-2: See Responses 1-3, 1-4 and 14-1.
17	3 - Identical submission as Commenter 16-3.	Response 17-3: See Responses 1-3, 1-4, and 14-1.
17	4 - Identical submission as Commenter 16-5.	Response 17-4: see Response 1-3 and 1-4.
17	5 – The Proposed rulemaking states that a constraint on airborne emissions of radioactive material to the environment, excluding radon 222 and its decay products, must be established by permittees such that the individual members of the public most likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of 10 mrem per year from these emissions. This proposed “exclusion of radon222 and its decay products” is an arbitrary and capricious removal of natural gas radioactive emissions from regulation under Part 380. This	Response 17-5: The proposed new paragraph 380-5.1(b), constraint on airborne emissions, establishes a 10 mrem constraint on the radiation dose to individual members of the public due to the release of radioactive material to the environment from persons subject to Part 380. The federal rule was adopted by NRC in 1997 to provide assurance that airborne emissions from licensed radioactive material will not result in the exceedance of dose levels set by EPA, and in doing so eliminated duplicate regulation by NRC and EPA. As explained in the RIS, as an Agreement State, New York is required to adopt this NRC rule to maintain compatibility with the federal rule set forth in 10 CFR 20. Radon is explicitly excluded from the constraint rule, because the federal rule applies to licensed radioactive material, not NORM. Therefore, the constraint on radioactive emissions in Part 380 does not include NORM, such as radon. Nonetheless, DEC and the NYSDOH have previously evaluated

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Commenter	Specific Comments	Response
	action contradicts the RIS which states "...these amendments are needed because of New York State's agreement with NRC: State is required to have regulation that are compatible with the federal regulation." It is critical that DEC adopt TENORM standards that align with the current EPA definition.	potential radiation exposures to radon in natural gas, and did not find an increased risk of exposure. Also, see Responses 1-3, 1-4, and 14-1.
17	6 – Fracked gas and its waste products are radioactive. Why do they go unregulated? It is time for DEC to revise the TENORM definition to come in line with EPA. Fracked gas and its waste steams must be regulated as TENORM.	Response 17-6: See Responses 1-1, 1-3, 1-4, 4-1, and 14-1.
18 thru 26	1 – Identical submission as Commenter 16-1.	Response 18 thru 26-1: See Responses 6-4 and 14-1.
18 thru 26	2 - Identical submission as Commenter 16-2	Response 18 thru 26-2: See Responses 1-3, 1-4, and 14-1.
18 thru 26	3 - Identical submission as Commenter 16- 3	Response 18 thru 26-3: See Responses 1-3, 1-4, and 14-1.
18 thru 26	4 - Identical submission as Commenter 16-4	Response 18 thru 26-4: See Response 16-4.
18 thru 26	5 - Identical submission as Commenter 16-5	Response 18 thru 26-5: See Responses 1-3 and 1-4.
18 thru 26	6 - Identical submission as Commenter 16-6	Response 18 thru 26-6: See Responses 1-3 and 1-4.
18 thru 26	7 - Identical submission as Commenter 16-7	Response 18 thru 26-7: See Responses 1-3 and 1-4.
27	1-I urge the DEC to adopt EPA's definition of TENORM in Part 380.	Response 27-1: See Response 14-1.
28	1 - identical submission as Commenter 16-5	Response 28-1: See Responses 1-3 and 1-4.
29	1-DEC should adopt the EPA definition of TENORM.	Response 29-1: See Response 14-1.
30	1-The proposed amendments to Part 380 look fine; I have no questions.	Response 30-1: Comment noted.
31	1-EPA's definition is the accepted federal benchmark for characterization and determination of TENORM and no lesser definition should be adopted by NYS. It is therefore recommended that DEC adopt EPA's definition of TENORM in Part 380.	Response 31-1: See Response 14-1.
31	2 - identical submission as Commenter 16-4	Response 31-2: See Response 16-4.

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Commenter	Specific Comments	Response
31	3-DEC is failing to evaluate the impacts of radon and its progeny that are present in the Marcellus / Utica natural gas presently being supplied to New York State. DEC has structured Part 380 such that it will exclude radon and progeny from regulation at all. Radon and its progeny are TENORM. Radon levels in Marcellus and Utica gas wells bring increased levels of radon to the home heating and cooking system and needs evaluation as to health impacts.	Response 31-3: See Responses 1-1, 1-3, 1-4, and 14-1.
31	4-Levels of radon to the air and water from natural gas infrastructure should be assessed and subject to Part 380 permitting.	Response 31-4: Environmental releases of NORM such as radon are not subject to Part 380. Also, see Responses 1-3 and 1-4.
31	5-Gas pipeline with radioactive scale buildup should be considered TENORM and regulated by Part 380.	Response 31-5: The buildup of pipe scale has long been recognized as processed and concentrated NORM (aka TENORM); the disposal of such waste has always been subject to regulation under Part 380. Also, see Response 6-4.
32	1 - Identical submission as Commenter 16-4.	Response 32-1: See Response 16-4.
32	2 - Identical submission as Commenter 16-5.	Response 32-2: See Responses 1-3 and 1-4.
32	3 - Identical submission as Commenter 16-6.	Response 32-3: See Responses 1-3 and 1-4.
32	4 - Identical submission as Commenter 16-7.	Response 32-4: See Responses 1-3 and 1-4.
32	5 – Radon poses major environmental and public health impacts that DEC must carefully assess. The DEC definition of TENORM must be brought in line with federal standards.	Response 32-5: See Responses 1-3, 1-4 and 14-1.
33	1- Identical submission as Commenter 16-4.	Response 33-1: See Response 16-4.
33	2- Identical submission as Commenter 16-5.	Response 33-2: See Responses 1-3 and 1-4.
33	3- Identical submission as Commenter 16-6.	Response 33-3: See Responses 1-3 and 1-4.
33	4- Identical submission as Commenter 16-7.	Response 33-4: See Responses 1-3 and 1-4.
33	5- Identical submission as Commenter 16-5.	Response 33-5: See Responses 1-3, 1-4, and 14-1.
34	1- Identical submission as Commenter 16-1.	Response 34-1: See Responses 6-4 and 14-1.
34	2- Identical submission as Commenter 16-5.	Response 34-2: See Responses 1-3 and 1-4.
35	1- Identical submission as Commenter 16-2.	Response 35-1: See Responses 1-3, 1-4, and 14-1.

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Commenter	Specific Comments	Response
36	1-Adopt EPA's definition of TENORM for the fracked natural gas that comes into New York State from Pennsylvania.	Response 36-1: See Responses 1-3 and 14-1.
36	2- Identical submission as Commenter 16-1.	Response 36-2: See Responses 6-4 and 14-1.
36	3- Identical submission as Commenter 16-3.	Response 36-3: See Responses 1-3, 1-4, and 14-1.
36	4- Identical submission as Commenter 16-4.	Response 36-4: See Response 16-4.
36	5- Identical submission as Commenter 16-5.	Response 36-5: See Responses 1-3 and 1-4.
36	6- Identical submission as Commenter 16-6.	Response 36-6: See Responses 1-3 and 1-4.
36	7- Identical submission as Commenter 16-7.	Response 36-7: See Responses 1-3 and 1-4.
36	8- Identical submission as Commenter 17-5.	Response 36-8: See Responses 17-5.
36	9- Identical submission as Commenter 32-5.	Response 36-9: See Responses 1-3, 1-4, and 14-1.
37	1-The only question NYS should ask is if it should have higher standards than the federal minimum, not less. This policy consideration should be promptly rejected.	Response 37-1: Comment noted.
38	1-Apply the federal definition of TENORM to all fracked gas in Pennsylvania.	Response 38-1: See Responses 1-3, 1-4, and 14-1.
39	1-Adhere to EPA guidelines for radon and other radioactive waste allowable levels in natural gas.	Response 39-1: See Responses 1-3, 1-4, and 14-1.
40	1-Adopt EPA's definition of TENORM.	Response 40-1: See Response 14-1.
41	1-Apply EPA's definition of TENORM to the radioactive material coming out of Pennsylvania's fracked-gas wells. Do not allow such waste into our state. Apply the TENORM standards to all the waste coming from fracking operations.	Response 41-1: See Responses 1-1, 1-3, and 14-1.
42	1-Fracked natural gas fits the definition of TENORM.	Response 42-1: See Responses 1-3, 1-4 and 14-1.
43	1-Apply the TENORM federal definition to everything coming out of Pennsylvania fracked wells.	Response 43-1: See Responses 1-1, 1-3, and 14-1.
44	1-Apply the federal definition of TENORM to all the stuff coming out of Pennsylvania fracked wells.	Response 44-1: See Responses 1-1, 1-3, and 14-1.

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Commenter	Specific Comments	Response
45	1-Apply the federal definition of TENORM to any and all of that which comes out of the Pennsylvania and New York fracked wells.	Response 45-1: See Responses 1-1, 1-3, and 14-1.
46	1-Adopt EPA's definition of TENORM.	Response 46-1: See Response 14-1.
47	1- Identical submission as Commenter 16-1.	Response 47-1: See Responses 6-4 and 14-1.
48	1- Identical submission as Commenter 16-4.	Response 48-1: See Response 16-4.
49	1- Identical submission as Commenter 16-4.	Response 49-1: See Response 16-4.
50	1-DEC is correct in formally recognizing TENORM as a regulated radioactive material. However, DEC must be vigilant in monitoring interstate haulers bringing TENORM into New York for disposal. DEC must closely scrutinize landfills, such as the Hyland landfill, to ensure that no TENORM is accepted from Pennsylvania or other states. We suggest DEC employ the strictest and most accurate radiation testing devices to detect whether incoming loads of waste are contaminated with TENORM.	Response 50-1: This issue is outside the scope of this rulemaking. However, the operation of the Hyland landfill is subject to regulation by Part 360, et. seq. and the conditions of its DEC-issued solid waste permit, which includes the use of radiation detectors to prevent the disposal of prohibited waste, such as TENORM. Also, see Response 1-1.
50	2-The Hyland landfill accepts TENORM in shale gas drilling waste from Pennsylvania. DEC failed to prevent tons of TENORM from being deposited at the Hyland landfill. Water and sediment sampling results demonstrate a pattern of episodically elevated radioactivity occurring in the Nineteen Gully stream, which we believe to be a result from the uncontrolled leachate breakouts at the landfill. This proves that the monitoring equipment at Hyland landfill did not prevent stream contamination.	Response 50-2: This issue is outside the scope of this rulemaking. However, the operation of the Hyland landfill is subject to regulation by Part 360 and the conditions of its permit, which includes the use of radiation detectors to prevent the disposal of prohibited waste, and leachate sampling. The Hyland landfill is prohibited from accepting TENORM for disposal. New York does not consider drill cuttings to be TENORM because there is no processing and concentration of the NORM present in the rock ground up by the drilling bit. Samples taken to date do not indicate elevated NORM concentrations in landfill leachate breakouts or impacts to nearby streams; fluctuations in sample results reflect normal background ranges. Also, see Response 1-1.
51	1- Identical submission as Commenter 16-4.	Response 51-1: See Response 16-4.
51	2- Identical submission as Commenter 16-6.	Response 51-2: See Responses 1-3 and 1-4.

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Commenter	Specific Comments	Response
52	1-Apply EPA's TENORM definition to the fracked gas coming out of Pennsylvania's fracked wells.	Response 52-1: See Responses 1-3, 1-4, and 14-1.
53	1- Identical submission as Commenter 16-6.	Response 53-1: See Responses 1-3 and 1-4.
54	1-Apply the federal definition of TENORM.	Response 54-1: See Response 14-1.
55	1-Fracked gas from Marcellus shale, and the radioactive discharges that accompany it during transmission, should be reclassified from NORM to TENORM so it can be regulated under Part 380.	Response 55-1: See Responses 1-3 and 1-4.
56	1-Adopt the federal definition of TENORM.	Response 56-1: See Response 14-1.
57	1-An environmental assessment is inadequate. A full EIS should be done on any waste containing Ra-226 or radon, including, but not limited to, drill cuttings from the Marcellus Shale.	Response 57-1: See Responses 1-1, 1-3, and 16-4.
57	2-The dosage limits have been set too high for the general public and way too high for women and children who are more vulnerable. Exposure on the job should also be taken into account	Response 57-2: See Responses to 6-3 and 6-4.
57	3-Hazardous waste from oil & gas exploration, production, transportation, and disposal should be labeled and treated as such, but it has been exempted even though cuttings from shale gas contain radioactivity. The loophole needs to be eliminated by DEC.	Response 57-3: See Responses 1-1, 3-1, and 4-1.
58	1-No fracking waste should be dumped in NY.	Response 58-1: See Responses 1-1, 3-1, and 4-1.
58	2-DEC should adopt EPA's definition of TENORM.	Response 58-2: See Response 14-1.
59	1-The Chemung County landfill receives Marcellus shale drill cuttings from Pennsylvania. Regulations must be developed to limit how much can be dumped into a single landfill. The landfill leachate must be measure for water soluble radium 226.	Response 59-1: The issue is outside the scope of this rulemaking. However, the operation of the Chemung County landfill is subject to regulation by Part 360 and the conditions of its solid waste permit, which includes leachate sampling. Also, see Response 1-1.

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Committer	Specific Comments	Response
59	2-The regulations must define TENORM properly. TENORM includes that which is moved closer to humans.	Response 59-2: See Response 14-1.
60	<p>1- Perform and environmental impact statement. The proposed amendments regarding radioactive material have public health and environmental impacts that must be fully evaluated.</p> <p>2- Adopt EPA’s definition of TENORM. The proposed amendments incorrectly apply the term NORM to radioactive contaminants in oil and gas operations.</p> <p>3- Include oil and gas operations, which qualify as a source of radium and its decay products.</p> <p>4- Include radon and its progeny, which are part of the full life cycle of natural gas development to its consumption. This radon exposure has not been fully addressed by DEC.</p> <p>5- Disposal variances should not be allowed. Variances would promote the widespread distribution of radioactive waste across NYS.</p> <p>6- The ALARA loophole must be removed. Dosage limits to radiation are unacceptable and must consider potential exposures to fetuses, children and women, which are more vulnerable populations.</p>	<p>Response 60-1: See Response 16-4.</p> <p>Response 60-2: See Response 14-1.</p> <p>Response 60-3: See Response 1-1.</p> <p>Response 60-4: See Responses 1-3 and 1-4.</p> <p>Response 60-5: See Response 6-7.</p> <p>Response 60-6: The public dose limits in Section 380-5.1 have not changed, and are protective of the vulnerable populations mentioned. In addition to the public dose limits, Section 380-5.1(a)(3) continues to require that disposals and releases of radioactive material to the environment be minimized so that doses to the individual members of the public are as low as reasonably achievable (ALARA). This means that ALARA requires public doses to be reduced as far below the limits as is reasonably achievable. Also, see Response 6-3.</p>

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Commenter	Specific Comments	Response
61	1-We need to use the federal definition.	Response 61-1: See Response 14-1.
62	1-Identical submission as Commenter 60.	Response 62-1: See Response 60-1 thru 60-6.
63	1-DEC should revise its proposed amendments to Part 380 by classifying radon and its progeny as TENORM.	Response 63-1: See Responses 1-3 and 1-4.
63	2-The proposed 10 mrem constraint in airborne emission excludes radon 222 and its decay products and should be rejected.	Response 63-2: See Response 17-5.
63	3-Adopt EPA's definition of TENORM.	Response 63-3: See Response 14-1.
64	1-DEC should consider adopting a TENORM definition and standard similar to EPA. Of particular concern is the exemption of NORM with atomic numbers less than 92 in any form and in natural isotopic abundance.	Response 64-1: See Responses 14-1 and 15-6.
64	2-The revised definition of public dose does not include doses received from background radiation. This is troubling because the definition of background radiation seems to be elastic enough to incorporate gradual increases in NORM levels due to waste disposal of radioactive waste products that remain in natural isotopic abundance.	Response 64-2: The definition of public dose is being revised to maintain compatibility with the NRC definition in 10 CFR 20. NRC's definition of public dose excludes dose received from background radiation, because controlling exposure to licensed radioactive material is the action being regulated. As an Agreement State, New York is required to adopt the same definition as NRC. The disposal of waste containing NORM does not increase background radiation levels because NORM contains isotopes in natural isotopic abundance, which do not exhibit increased levels of radioactivity.
64	3-It is unclear what kinds of variances may be given, and what the risks associate with those variances would be. It is also unclear why DEC would grant a variance upon its own initiative.	Response 64-3: The need for DEC to initiate a variance upon its own initiative could arise in response to an unusual event or emergency. Also, see Response 6-7.
64	4-Suitable restrictions are placed on materials disposed of by release to sanitary sewerage and by incineration, and that material that may be concentrated in sewage sludge or incinerator ash may be additionally restricted. However, it is	Response 64-4: Should elevated radioactive material be detected in sewage sludge or incinerator ash, the disposal of such material would be required to meet the disposal restrictions in Subpart 380-4.

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Commenter	Specific Comments	Response
	unclear how these concentrated media will subsequently be disposed of.	
64	5-The exclusion of radon-222 and its decay product from the constraint on airborne emissions is concerning. DEC should clarify why this important radionuclide is being excluded from regulation.	Response 64-5: See Response 17-5.
64	6-We support the recordkeeping requirements as long as these records will be available to the public via FOIA request.	Response 64-6: Under the New York State Freedom of Information Law (FOIL) and its implementing regulations (6 NYCRR Part 616), all information submitted to DEC, with limited exceptions, is subject to public review by request.
64	7-Dose limits exclude concentrations from background radiation and from disposal to sanitary sewerage.	Response 64-7: As an Agreement State, New York cannot set dose limits which differ from those established by NRC in 10 CFR 20. NRC's dose limits do not include exposure to background radiation, because controlling exposure to licensed radioactive material is the action being regulated.
64	8-DEC should consider conducting more research of protocols for disposal of drill cuttings, periodic independent monitoring of waste water treatment facilities, solid and liquid waste, and leachate.	Response 64-8: The issue is outside the scope of this rulemaking. However, well drilling operations are subject to regulation under 6 NYCRR Parts 550-559 and the conditions of the drilling permits. Leachate monitoring is also subject to DEC regulations at 6 NYCRR Part 363. Also, see Response 1-1.
64	9-DEC should amend the Negative Declaration and declare that it is a Type 1 action requiring an EIS.	Response 64-9: See Response 16-4.
65	1a-There is a need for an introductory paragraph that explains the whole Agreement State program and how three NY agencies have different responsibilities. 1b-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 the radioactive material when it is transferred.	Response 65-1a: See Response 11-1. Response 65-1b: Since all Agreement States must maintain regulations compatible with those of NRC, the requirements for transfer of radioactive material in all states are the same. Such transfers must be conducted in accordance with those regulations, and documented.
65	2-These regulations pose significant potential environmental impacts and should have been	Response 65-2: See Response 16-4.

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Commenter	Specific Comments	Response
	<p>identified as a Type I Action, requiring an Environmental Impact Statement. We do not agree with the Negative Declaration given on the basis of only an Environmental Assessment Form. Exemptions and variance undermine the regulatory plan for radioactive materials.</p>	
65	<p>3- DEC should delete the exemption provision in 380-3.4 and instead utilize the variance provision in 380-3.5, based on the following:</p> <p>3a- A person seeking an exemption is not required to apply for a permit and document in writing how the public dose limit was calculated. DEC can grant an exemption without a written document approving the exemption and the accuracy of the calculation provided to justify the exemption. If approval is based on incorrect emission calculations, the problem could go unaddressed for years.</p>	<p>Response 65-3a: The exemption criteria in Section 380-3.4 have not changed. Exhaust systems which release radioactive material to the air that meet the criteria are exempt from having to obtain a permit. The exemption criteria are set very low: less than ten percent of the radionuclide concentration values listed in Table II, Column 1, of Section 380-11.7, without relying on effluent treatment. As explained in Section 380-11.4, Table II Effluent Concentrations, the concentration values in Column 1 of Table II are applicable to the assessment and control of dose to the public, and are equivalent to the radionuclide concentration which, if inhaled continuously over the course of a year, would produce a total effective dose equivalent of 50 mrem, except for noble gasses, which would produce a total effective dose equivalent of 100 mrem due to submersion. Hence, radioactive emissions meeting the exemption (less than ten percent of the concentration value) could not result in a public dose exceeding 10 mrem. In other words, emission concentrations meeting the exemption criteria inherently demonstrate that both the 100 mrem public dose limit and the 10 mrem dose constraint are met.</p> <p>Persons meeting the Section 380-3.4 exemption are not required to apply for, or receive, specific exemption approval from DEC prior to utilizing the exemption. Instead, persons meeting the exemption are required to conduct surveys to demonstrate the exemption has been met, per Section 380-6.1, and to maintain records of those surveys per Section 380-8.3. If a person believed the exemption was met, and DEC later learned that determination was erroneous, the person would be cited for multiple violations of Part 380, including failure to obtain the required permit per Section 380-3.1. (Note that such persons could only operate after first obtaining the required radioactive materials license.) To avoid this potential problem, the licensing agencies routinely refer persons applying for a radioactive materials</p>

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Commenter	Specific Comments	Response
	<p>3b- There is no requirement for permittees to have a technically qualified person submit technical documents associated with an exemption.</p> <p>3c- The 10 mrem constraint in 380-3.5(b) does not appear to be incorporated into the exemption provision.</p> <p>3d- The chart values on 380-11.7 are provided in microcuries per milliliter, and an exemption could be granted if emissions do not exceed 10% of the chart values. However, this leaves out the provision not to exceed 10 mrem per year.</p> <p>3e- Average emissions may not be adequate in urban areas where building air intakes are in close proximity to emission points.</p>	<p>license to DEC for an emission evaluation to determine if DEC concurs whether or not the exemption will be met.</p> <p>Response 65-3b: See responses 11-4 and 11-9d.</p> <p>Response 65-3c: The 100 mrem annual public dose limit and the 10 mrem dose constraint in Section 380-5.1 apply to all persons subject to Part 380, which includes persons utilizing the exemption provision in Section 380-3.4.</p> <p>Response 65-3d: See Responses 65-3a and 65-3c.</p> <p>Response 65-3e: DEC shares this concern. For that reason, the exemption criteria in Section 380-3.4 conservatively requires that the effluent concentration criteria be met at the emission point, rather than at a receptor location farther away (such as a nearby air intake).</p>
65	<p>4- Concerns about the variance provision:</p> <p>4a- We recommend that variances only be granted with a written request and approval process in a permit – even if DEC made the recommendation for a variance on its own initiative. We expect that all variances be documented in writing. The variance section needs to specify limits to what might be permitted, otherwise, the variance provision is a loophole that is effectively deregulatory.</p>	<p>Response 65-4a: Section 380-3.5 requires all applications for a variance to be submitted in writing, and to provide all the information specified therein. Since a request for a variance would be made in regards to a specific provision of Part 380, to reflect a unique or unusual situation, it is not possible to specify limits to what a variance might allow in the regulation. However, such limits would be specified in any variance granted. Historically, variances have been requested, and granted, infrequently.</p>

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Commenter	Specific Comments	Response
	<p>4b- Under 380-3.5(d) a disposal permit may not be required. We are concerned about the implication of such large loopholes. None of this deregulation was identified as necessary for compatibility with the NRC agreement State Program.</p> <p>4c- We are concerned that this blanket variance has a specific purpose, possibly for TENORM. The proposed regulations are silent on how TENORM will be regulated in the future. These regulations only define TENORM without having any specific regulation of this material. TENORM associated with oil and gas development is under current law unregulated and is going to landfills in NY. The regulations should discuss how you will screen for the potential that TENORM is being handled and possibly disposed of improperly.</p> <p>4d- There is no mention of recordkeeping under variances. All variance should be documented to have a meaningful paper trail. Proposed variances should be noticed to the public with an opportunity to comment before final decisions.</p>	<p>Response 65-4b: the variance provision in Section 380-3.5 has not changed, other than being reworded to clarify that an application for a variance to approve proposed procedures to dispose of radioactive material is not the same as an application for a permit. Instead, an application is for approval for alternative disposal procedures. A variance request must be submitted in conjunction with an application for a permit when another aspect of the action requires another type of permit. DEC is required to maintain the variance provision for compatibility with federal NRC regulations in 10 CFR 20. Also, see Responses 6-7 and 64-3.</p> <p>Response 65-4c: TENORM is regulated radioactive material per Section 380-1.2(e) and must be disposed of in accordance with Subpart 380-4. Waste containing NORM may be disposed of in landfills in accordance with Part 363 provided the waste does not trigger radiation detection levels imposed pursuant to Part 363. See Response 1-1.</p> <p>Response 65-4d: Per Section 380-3.5, requests for a variance must be made in writing so there would be a record of any incoming requests for a variance as well as DEC's response. DEC anticipates that most variances would be submitted simultaneously with a permit application. The Uniform Procedures Act (UPA) and its implementing regulations at 6 NYCRR Part 621 specifies the opportunities available to the public to comment on applications subject to the UPA. All variances are granted with specific conditions, limitations, and recordkeeping requirements. Persons granted a variance for alternative disposal procedures must maintain records of that disposal per Section 380-8.5, Records of Waste Disposal.</p>
65	5-The Department has not made clear its entire plan for disposal under Subpart 380-4. New York has	Response 65-5: This is outside the scope of this regulation. However, the DEC is aware of, and is participating in or monitoring, many radiological remedial efforts throughout the

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Commenter	Specific Comments	Response
	many radioactive sites that still need remediation, including the West Valley nuclear waste site. How many radioactive sites are still in need of remediation?	State. This includes participating in the DOE National Environmental Policy Act (NEPA) and NYS Energy Research and Development Authority SEQRA actions for remediation of the West Valley site, participating in the interagency group overseeing DOE remedial efforts at Brookhaven National Lab, and providing State oversight for the DOE Formerly Utilized Site Remedial Action Program (FUSRAP) and US National Parks Service characterization and remediation activities at Great Kills National Park.
65	6- All relevant permit must apply to each type of disposal. For example, incineration and air releases required compliance with Parts 201, 219, 212, and likely 231.	Response 65-6: Revised Section 380-3.2 requires applications for a permit to also satisfy the requirements for complete applications in Part 621, which requires the submission of applications for all permits required for the proposed action.
65	7-The provisions for releases to sanitary sewer facilities are problematic. The annual limit of 1 curie per year for all radionuclides except for tritium and carbon-14 is far too excessive for some radionuclides. We recommend the DEC require much more analysis and documentation with relation to achieving ALARA in order to protect public health, including use of Section 380-7 Release Minimization Programs.	Response 65-7: The monthly average concentration limits in Section 380-11.7, Table III, Releases to Sewers, have not changed. These limits are consistent with federal standards, which are protective of public health and the environment. As an Agreement State, New York cannot establish Table III limits which differ from those established by NRC in 10 CFR 20. In addition to Table III limits, Section 380-4.2 also establishes solubility criteria that radioactive material released into sanitary sewerage must meet. Paragraph 380-4.2(c) states that DEC may impose additional restrictions on the release of licensed material into sanitary sewerage in order to minimize or avoid adverse environmental impacts. Subpart 380-6 requires surveys of the quantities and concentrations of radioactive material released to sanitary sewer systems, and Subpart 380-8 requires the maintenance of records of all such discharges. Paragraph 380-5.1(a)(3) requires persons releasing radioactive material to sanitary sewerage to minimize releases so that doses to individual members of the public are maintained ALARA. However, Subpart 380-7, Release Minimization Programs, apply only to permittees.
65	8- Doses allowed for the public are unacceptable – 100 mrem in a year. These doses were established by NRC using the reference man, not women or children who are more sensitive to radiation effects. There is no mention of the usually applied additional safety factors for these populations.	Response 65-8: Section 380-11.4 explains how the effluent concentration values in Table II were derived, including the safety factors used to adjust the values derived for adults so they are applicable to other age groups. Also, see Response 6-3.

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65	9-Recommend explicit requirements for how ALARA must be demonstrated by the permittee.	Response 65-9: Section 380-5.1(a)(3) continues to require that releases of radioactive material to the environment be minimized so that doses to individual members of the public are maintained ALARA. Towards that end, Subpart 380-7 requires all permittees to develop, document, and implement a Discharge Minimization Program for maintaining releases of licensed radioactive material to the environment ALARA. Section 380-3.2 specifies the information that must be included in an application for a permit, including any supplemental information which DEC notifies the applicant is necessary to review the application, such as a permit application guide. All permit applicants are directed to provide all the information requested in the permit application guide, including a detailed Release Minimization Program that addresses radioactive releases to the environment, to ensure releases are maintained ALARA.
65	10-Concerns with public dose limits: 10a- The dose for an unrestricted area is 2 mrems per hour. Why should an unrestricted area be delivering this much radiation? 10b- There is no definition for external source in these regulations. It appears to mean a source external to an individual, 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.	Response 65-10a: The dose limits for individual members of the public have not changed, other than the addition of the 10 mrem constraint. Section 380-5.1 specifies that the total effective dose equivalent (TEDE) may not exceed 100 mrem in a year, and the dose in any unrestricted area in the environment from external sources does not exceed 2 mrem in any one hour. The latter limit ensures that a transitory elevated dose rate in an unrestricted area in the environment may not exceed 2 mrem in any hour, thereby limiting peak dose rates. Response 65-10b: Correct. As defined in Section 380-2.1(a)(65), the TEDE means the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures). Section 380-5.1 limits the TEDE to individual members of the public to 100 mrem in a year.
65	11- The charts in Subpart 380-11 are a problem in that there are no references as to the origin of the charts. There are inadequate notations on this table to explain the abbreviations, the references to other radionuclides, and the health effect selected as the principal concern. The NRC reference is 10	Response 65-11: Sections 380-11.1 through 380-11.5 provide a full explanation of how the values in Section 380-11.7, Tables of Concentrations, were derived, including the abbreviations, health effects of concern, and the safety factors used. The preamble to the Tables of Concentrations in these sections provide the same language and information as appears in NRC's regulation, 10 CFR 20, Appendix B.

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	CFR20, Appendix B, which provides more information about safety factors used by NRC that do the DEC charts. We recommend using the NRC explanatory information in the DEC charts.	
65	12- DEC indicates it will only be permitting persons, not facilities. 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 DEC to 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.	Response 65-12: Section 380-3.2 specifies the information that must be included in an application for a permit, including any supplemental information which DEC notifies the applicant is necessary to complete its review. Such supplemental information includes technical permit application guides, which require the applicant to provide detailed information on all relevant legal, technical, and operational areas relevant to environmental releases, including those mentioned in the comment. Without adequate information regarding all operational areas mentioned, DEC would not be able to conduct a full permit application review; therefore, a permit could not be issued. Throughout the amendment, language has been revised to clarify that the person conducting the regulated action is subject to Part 380; this language change was made for consistency with overall DEC policy.
65	13-Qualified technical persons should be a required element. These regulations deleted the definition of radiation safety officer. We believe it is essential to require the signature of a technically qualified person.	Response 65-13: Having qualified technical personnel is a required element. See Responses 11-4 and 11-9d.
65	14-DEC waivers throughout between the terms "use" of radioactive material and excluding it and referring only to release and disposal. We prefer that DEC regulate "use" as well.	Response 65-14: The use of radioactive material is regulated by the radioactive material licensing agencies. However, under revised Section 280-1.2, Applicability, the regulations will now more clearly indicate that DEC regulates the use of licensed radioactive material in the environment, and new paragraph 380-3.1(a)(5) will require a permit be obtained to authorize such use. Also, see Response 11-2.
65	15- Section 380-1.1 talks about disposal and release. There is no mention of permits from DEC.	Response 65-15: Permit requirements appear in Section 380-3.1.
65	16-Section 380-1.2 Applicability - we recommend the term licensed <u>radioactive</u> material rather than just licensed material to avoid confusion.	Response 65-16: Agreed. Paragraph 380-1.2(a) has been revised to add the word "radioactive" between the words "licensed" and "material."

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65	17- There is a conflict between 1.2 f) and h). Item f) does not apply to a person subject to NRC or DOE regulations. However, h) applies to any person who own 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 the final decision regarding West Valley property and for that reason we don't recommend a change to this apparent conflict.	Response 65-17: There is no conflict. Paragraph 380-1.2(f) continues to recognize that Part 380 does not apply to persons subject to regulation by NRC or the US Department Of Energy (DOE). New paragraph 380-1.2(h) clarifies that Part 380 applies to any person who owns or maintains a site containing buried radioactive material. With regards to the West Valley site, only that portion of the site which is controlled and regulated by NYS (the State-licensed Disposal Area, or SDA) is subject to regulatory control by NYS and Part 380. The remainder of the West Valley site is currently controlled and regulated by DOE in accordance with the West Valley Demonstration Project Act (WVDPA); when DOE returns control of the remainder of the site back to NYS the technical specifications of the NRC license for the site (currently in abeyance while DOE fulfills the requirements of the WVDPA) will again apply to the site.
65	18- Why should persons regulated primarily by NYSDOH or NYCDOH make reports to DEC per 380-1.3 Communications? We recommend being specific about when licensees should be calling DOH and when they should be calling DEC. Please clarify whether only DEC should receive reports about incidents and spills.	Response 65-18: Section 380-1.3 provides the DEC contact information for reports required by Part 380; those reports are listed in Subpart 380-9, Reports. All persons subject to Part 380 must submit the reports required by Subpart 380-9, as applicable. Section 380-9.2, Notification of Incidents, establishes the criteria for reporting incidents to DEC. The radioactive materials licensing agency specifies its reporting requirement in its regulations and license conditions. For some incidents, reports would be required to be submitted to both DEC and the licensing agency.
65	19- Suddenly under 380-1.5, Transition, we are discussing existing permits and these in violation. However, the stage was not set for permits with DEC prior to this Section.	Response 65-19: Section 380-1.5, Transition, establishes transition rules for the amendment and describes the regulatory status of persons subject to Part 380 on the effective date of the amendment.
65	20- Comments on Section 380-2, Definitions: 20a- Annual Limit on Intake – there are multiple definitions relating to occupational exposures. No use is made for them in the regulations. It is not clear why you are keeping them. 20b- Background radiation – the second sentence lists only three types of nuclear material that are	Response 65-20a: Section 380-11.4, Table II Effluent Concentrations, explains how the Annual Limit on Intakes (ALIs) were used to derive the air and water effluent concentration values. For this reason, the definition of ALI was retained. Response 65-20b: See Responses 11-8a and 64-2.

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	<p>not considered background. The definition leaves out other sources that are not considered background radiation: emissions from nuclear power plants and nuclear waste, nuclear weapons installations, and radiation associated with medical procedures.</p> <p>20c- Class (or lung class or inhalation class). Please provide a reference for this.</p> <p>20d- Disposal – the reference to injection as disposal is likely not acceptable for health professional or patients.</p> <p>20e- 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.</p> <p>20f- Permit – we recommend putting “use” first in the definition, then release or disposal.</p> <p>20g- Reference Man – we recommend changing public health “worker” to “professional” and add “typical man” and “when applied to women and children additional safety factors are used because of their increase sensitivity to radiation.”</p> <p>20h- Release – add “media such as air, soil, water.”</p>	<p>Response 65-20c: Explanations of this term are provided in Sections 380-11.1 and 380-11.2. Also see Response 65-11.</p> <p>Response 65-20d: See Response 11-8c.</p> <p>Response 65-20e: The definition of effluent treatment in paragraph 380-2.1(a)(25) is written to purposefully exclude devices or procedures utilized before the effluent is generated, to clarify that such preventative steps (such as buffering a solution to reduce its volatility, or employing a containment device) are not considered effluent treatment. Instead, such preventative steps would be considered a component of a permittee’s Discharge Minimization Program, and an ALARA action.</p> <p>Response 65-20f: Comment noted. No change to word order made.</p> <p>Response 65-20g: As an Agreement State, NYS must adopt the same definition of reference man as is used by NRC in 10 CR 20.</p> <p>Response 65-20h: Comment noted. No changes to definition made.</p>

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	<p>20i- Restricted Area – add “as long as evaluation for radiation exposure has been satisfactory.”</p> <p>20j- Survey – since there are other types of surveys, we recommend adding “radiation” before survey.</p> <p>20k- Uncontrolled release – add “as a result of a variety of events including...”</p>	<p>Response 65-20i: See Response 65-20g.</p> <p>Response 65-20j: Survey is defined in paragraph 380-1.2(a)(64) as an evaluation of radiologic conditions, and may include measurements, monitoring, or calculations of levels of radiation, concentrations, or quantities of radioactive material present. Hence, it is not necessary to modify the word “survey” with the word “radiation” in the regulation.</p> <p>Response 65-20k: Comment noted. No changes to definition made.</p>
65	<p>21a- DEC has been inconsistent around the issue of “use of” radioactive material.</p> <p>21b- We believe all those who use, handle or manage radioactive materials should have a license or a permit. They have a potential to release radioactive materials. DEC needs to define who is regulated by the Health Departments under a license and who is regulated by DEC under a permit.</p> <p>21c- Item 3.1a)5) recommend adding “handling or managing” radioactive material in the environment.</p>	<p>Response 65-21a: See Responses 11-2 and 65-14.</p> <p>Response 65-21b: Licensed radioactive material can only be obtained after a person has obtained a radioactive materials license authorizing such possession and use. Via Part 380, DEC regulates the release or disposal of radioactive material. Therefore, Part 380 applies to any New York licensee who releases or discharges radioactive material to the environment. The actions listed in Section 380-3.1, Permit Requirements, may only be undertaken when authorized via a DEC permit.</p> <p>Response 65-21c: Comment noted. No changes to wording made.</p>
65	<p>22- Section 380-3.2 should include a description of the proposed action, emissions, release or disposal of radioactive material, and a certification of accuracy of the technical information provided in the application.</p>	<p>Response 65-22: See Response 11-4.</p>
65	<p>23- DEC has not complied with ECL 37, which requires the preparation of a hazardous substance list, and all those of the federal CERCLA Hazardous</p>	<p>Response 65-23: See Response 11-7.</p>

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	Substance list were required to be on the State list. In relation to Part 380 and radioactive materials, there are a long list of radionuclides on the CERCLA list with required reporting for spills.	
65	24- Under 380-5.2b) we recommend adding “radiation” to surveys here. In 380-6 the title should be “radiation” monitoring and surveys. There are many types of surveys. DEC leaves out monitors until it talks about calibration of instruments.	Response 65-24: See Response 65-20j.
65	25- 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. DEC should expect that permittees are regularly monitoring their operations. The focus only on complying with annual survey requirements is inappropriate here.	Response 65-25: Section 380-5.2 addresses compliance with annual dose limits for individual members of the public. There is no mention of an “annual survey.” Instead, this section requires each person subject to Part 380 to make appropriate surveys of radiation levels and radioactive materials in effluents to demonstrate compliance with the annual public dose limits. Survey is defined in paragraph 380-1.2(a)(64) as an evaluation of radiologic conditions, and may include measurements, monitoring, or calculations of levels of radiation, concentrations, or quantities of radioactive material present. In addition, Subpart 380-6 requires surveys be conducted to evaluate the magnitude and extent of radiation levels in the environment and the concentrations or quantities of radioactive material in effluents, used in the environment, or disposed in the environment. The survey method(s) used by permittees to track all environmental releases are reviewed and approved by DEC during the permit application process, per Section 380-3.2.
65	26- Under 380-8.1d) retaining records for only 3 years is grossly inadequate. We recommend a longer time period.	Response 65-26: Subdivision 380-8.1(d) requires records be maintained for three years after the record is made or until the licensing agency terminates the license, whichever is longer.
65	27- Transfer of Permit – we recommend “If the permittee has notified the DEC and transferred the permit pursuant to Part 621, the permittee must transfer all records...”	Response 65-27: Section 380-8.7, Transfer of Permit, requires the permittee to transfer all records to the new permittee whenever a permit is transferred. Permittees cannot unilaterally transfer a permit. Instead, all permit transfers must be done in accordance with Part 621, which ensures the transfer follows the formal permit transfer application process, with adequate review and approval by DEC.

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Commenter	Specific Comments	Response
65	28- Annual Reports – do you want licensees to report to DEC?	Response 65-28: Section 380-9.1, Annual Reports, requires each permittee to submit an annual report on its radioactive releases or disposals during the previous calendar year. Licensees that do not have a permit are not required to submit an annual report to DEC.
65	<p>29- Comments on Notification of Incidents:</p> <p>29a- Immediate Report – this statement must require and encourage immediate reporting. To that end, DEC should remove the qualifying language that obstructs the primary purpose “after the discovery of an event...”</p> <p>29b- Contents of Telephone (immediate) Reports. Recommend additions including the caller’s job title, names of responsible persons, whether additional assistance was called, persons injured, and other reporting to other agencies.</p> <p>29c- We recommend the addition of an interim report before the 30-day report.</p>	<p>Response 65-29a: An event cannot be reported until it is discovered.</p> <p>Response 65-29b: The reporting information required in Section 380-9.3, Contents of Reports, is comprehensive and would capture all areas of interest mentioned.</p> <p>Response 65-29c: The immediate telephone and 30-day reports required by Section 380-9.2 are the minimum reporting requirements. In such an event, DEC would be communicating frequently with the incident mangers, as well as with the radioactive materials licensing agency.</p>
65	30- Enforcement – here we have the continued inconsistency of not talking about the USE of radioactive material – but just disposing and releasing. Better that they are known as using with the potential for releasing.	Response 65-30: See Responses 11-2 and 65-14.
65	31- Vacating Premises – we recommend no less than 60 days to give time for DEC to assess what remediation may be necessary.	Response 65-31: Section 380-10.4, Vacating Premises, requires permittees to notify DEC no less than 30 days before vacating or relinquishing possession or control of premises which may have been contaminated with radioactive material. This provision is placed on permittees in addition to the extensive regulatory process that must take place prior to the termination of the radioactive materials license, which can include extensive characterization

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Commenter	Specific Comments	Response
		surveys, decontamination, and final release surveys. This process usually takes several months. The requirement to notify DEC ensures that DEC has the opportunity to confirm that there is no further potential for environmental release prior to the premises being vacated, which is done before the permit is formally discontinued.
65	32- It is not clear why you are covering occupational exposures at all. There are no regulations that address worker exposures. Who is enforcing occupational limits?	Response 65-32: As explained in the RIS, under New York’s Agreement, the NYS and NYC Health Departments issue radioactive materials licenses to authorize the use and possession of radioactive material; DEC regulates the environmental impacts of the release or disposal of radioactive materials. Therefore, occupational exposures are not regulated by DEC. Instead, occupation exposures are regulated by the radioactive materials licensing agency via its regulations and license conditions. Also, see Response 65-20a.
66	1-The proposed definition of TENORM falls short of ensuring protection from all waste materials that may exhibit radiation levels potentially harmful to humans. Under DEC’s proposed definition, these materials would not be regulated even though they may be highly radioactive.	Response 66-1: Any waste materials containing NORM found to be “highly radioactive” would be regulated under Section 380-1.2(e). Also see Response 1-1.
66	2- DEC should adopt EPA’s proposed definition of TENORM. DEC should revise its definition to include “or for which through human activity the potential for human exposure has been increased.”	Response 66-2: See Response 14-1.
67	1-As a community directly impacted by the site of the 12,260 compressor station operated by Millennium Pipeline and the regulations, we request intervenor status.	Response 67-1: The purpose of the public comment period for the proposed Part 380 rulemaking is to receive comments on the text of the proposed rule and the supporting documents. In responding to comments received, DEC does not grant intervenor status. All comments received are given equal weight and are carefully considered to determine if any changes to the proposed rules are necessary.
67	2-We are requesting a complete Health Impact Analysis on the exposure of radioactive materials and radioactive particulates from natural gas emission sources by the NYS Department of Health before finalizing these proposed rulemaking changes.	Response 67-2: This is outside the scope of this rulemaking. Also, see Responses 1-3 and 1-4.

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Commenter	Specific Comments	Response
67	3-The SEQR process as it pertains to the proposed amendments to Part 380 does not meet the intent of SEQRA and the DEC Negative Declaration of Significance is indefensible. These regulations pose significant environmental impacts and should have been identified as a Type I Action, requiring an EIS.	Response 67-3: See Response 16-4.
67	4-DEC should properly classify fracked gas under TENORM.	Response 67-4: See Response 1-3.
67	5-NORM with atomic numbers less than 92 ignores the threat form TENORM exposure to radon, polonium, and radioactive lead in fracked gas.	Response 67-5: See Responses 1-3, 1-4, and 15-6.
67	6-The proposed exclusion of radon and its decay products is an arbitrary and capricious removal of natural gas radioactive emissions from regulation under Part 380.	Response 67-6: See Response 17-5.
67	7-The DSCEIS needs to be withdrawn and revised to consider this public health and environmental hazard.	Response 67-7: See Responses 1-3 and 1-4.
67	8-EPA's definition is the accepted federal benchmark for characterization and determination of TENORM and no lesser definition should be adopted by NYS.	Response 67-8: See Response 14-1.
67	9-Request that DEC do its own testing around emission sources such as compressor stations and gas fired power plants, and issue regulations after results of such tests are compiled and released to the public for review.	Response 67-9: See Response 6-5.
68	1-Identical submission as Commenter 60.	Response 68-1: See Responses 60-1 thru 60-6.
69	1-Identical submission as Commenter 60.	Response 69-1: See Responses 60-1 thru 60-6.
70	1-Identical submission as Commenter 60.	Response 70-1: See Responses 60-1 thru 60-6.
71	1-Identical submission as Commenter 60.	Response 71-1: See Responses 60-1 thru 60-6.

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Commenter	Specific Comments	Response
72	1-Identical submission as Commenter 60.	Response 72-1: See Responses 60-1 thru 60-6.
73	1-DEC should adopt EPA's definition of TENORM	Response 73-1: See Response 14-1.
73	2-DEC needs to independently calculate and measure radon at the wellhead from the Marcellus shale formation in presently operating wells before issuing drilling permits in NYS.	Response 73-2: The issue is outside the scope of this rulemaking. However, well drilling operations are subject to regulation under 6 NYCRR Parts 550-559 and the conditions of any drilling permits. Also, see Response 1-4.
73	3-The present RDSGEIS should be withdrawn.	Response 73-3: The issue is outside the scope of this rulemaking. See the FSGEIS on the Oil, Gas, and Solution Mining Regulatory Program.
73	4-Revise the definition of NORM and TENORM.	Response 73-4: See Response 14-1.
74	1-DEC's failed to identify its action in proposing major revisions to the Part 380 regulations as a Type 1 action. DEC's reliance on a negative declaration dated November 8, 2013 is of great concern because none of the relevant radioactive gas drilling studies of scope and impacts of radioactive gas drilling waste or the many permitting proceedings since 2013 are considered in making its determination that its proposed revisions relating to TENORM and NORM will not result in any significant environmental impacts.	Response 74-1: Although the negative declaration was initially completed in 2013, all relevant studies, DEC permitting proceedings, and regulatory actions were reviewed and considered before the proposed amendment was filed in March 2017. See Responses 1-1, 1-3, 1-4, and 16-4.
74	2-DEC's proclamation that radon is not regulated since it naturally occurs in the environment and that drill cuttings are NORM, not TENORM appears inconsistent with the revised definition of byproduct material in the 2005 amendment to the Atomic Energy Act, which includes any discrete source of radon-226 that is produced, extracted, or converted after extraction for use for a commercial activity as byproduct materials. Drill cuttings and other gas drilling wastes can be source of radium, so gas drilling wastes containing radium	Response 74-2: There is no inconsistency. NRC's final rule for the expanded definition of byproduct material in 10 CFR 20 (effective October 1, 2007) defines "discrete source" as a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical, or research activities. In other words, a discrete source is a specifically manufactured sealed source or device. Such material has always been regulated as licensed radioactive materials in NYS, and the disposal of such materials has always been regulated by Part 380. Radium present in drilling wastes does not meet the definition of a discrete source, and does not meet the definition of byproduct material. However, any radium present in such wastes that has been processed and concentrated is subject to regulation under 380-1.2(e). Also, see Response 1-1.

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Commenter	Specific Comments	Response
	and radon qualify as byproduct material and should be regulated to meet NYS's obligations under its NRC Agreement.	
74	3-DEC must adopt EPA's definition of TENORM.	Response 74-3: See Response 14-1.
75	1-Identical submission as Commenter 60.	Response 75-1: See Responses 60-1 thru 60-6.
76	1-Concerned about frack waste coming into NYS landfills from Pennsylvania wells. NY is accepting this waste and calling it NORM, which it is not. Rather, it is TENORM. Fracking waste should be banned on the same health and safety basis.	Response 76-1: See Responses 1-1 and 4-1.
77	1-Identical submission as Commenter 60.	Response 77-1: See Responses 60-1 thru 60-6.
78	1-Identical submission as Commenter 60.	Response 78-1: See Responses 60-1 thru 60-6.
79	1-Identical submission as Commenter 60.	Response 79-1: See Responses 60-1 thru 60-6.
80	1-DEC should give consideration to combined effects from all radiation exposure pathways. DEC must not accept the untenable assumption that radioactivity from nuclear power operations somehow impacts populations independently from other exposures.	Response 80-1: This issue is outside the scope of this rulemaking. The NRC has sole jurisdiction of the regulation of nuclear reactors and nuclear power generating stations. Those operations are subject to NRC's federal regulations (10 CFR 19-50).
80	2-DEC must protect the most vulnerable individuals and populations. The longevity of many radionuclides make emissions from nuclear industrial and other activities uniquely dangerous to the environment and public health.	Response 80-2: With respect to nuclear power operations, this issue is outside the scope of this rulemaking. See Response 80-1. NRC's regulations are protective of all age groups.
80	3-DEC must further the objective of environmental justice. Federal regulatory actions have enabled nuclear power interests to impose enormous costs upon site communities which have little to no recourse to self-protection.	Response 80-3: This issue is outside the scope of this rulemaking. See Response 80-1.
80	4-DEC must consider the full spectrum of health risks, and not narrowly focus on cancer.	Response 80-4: With respect to nuclear power operations, this issue is outside the scope of this rulemaking. See Response 80-1. NRC's regulations consider all health risks, and limit

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Commenter	Specific Comments	Response
		both stochastic effects (e.g., cancer) and non-stochastic effects. Non-stochastic effects are presumed not to occur the dose levels established for individual members of the public.
80	5-DEC must act to protect future generations. Radioactive isotopes will remain dangerous for many centuries to come. Thus – even ignoring all the additional radiation exposures from nuclear accidents and leaks – the chronic so-called ‘low-level’ of radiation emitted during ordinary nuclear power operations will accumulate and long-lived isotopes will remain in the biosphere for hundreds of thousands of years.	Response 80-5: This issue is outside the scope of this rulemaking. See Response 80-1.
80	6-DEC must ensure protection of NY’s precious groundwater and source waters. Water resource stress, toxic loads and thermal pollution are grave concerns in our changing climate. Bioaccumulation and the longevity of radioactivity must be factored into the equation.	Response 80-6: With respect to nuclear power operations, this issue is outside the scope of this rulemaking. See Response 80-1.
80	7- It is time for independent monitoring of at-release-point radioactive effluents and epidemiological studies of ‘exposure zone’ populations need to be conducted.	Response 80-7: With respect to nuclear power operations, this issue is outside the scope of this rulemaking. See Response 80-1. However, radioactive effluents are continuously monitored by nuclear power plants, and those result are submitted to, and reviewed by, NRC. Also, NYSDOH conducts environmental monitoring around all of the nuclear power plants in the State; data from 2009-2016 is available on its web site. Additionally, epidemiological studies around nuclear power plants were conducted by the National Cancer Institute; the results of that study were published in a report issued by the US Department of Health and Human Services entitled “Cancer in Populations living Near Nuclear Facilities” in 1990 (NIH Publication No 90-874). That study did not find any increase in cancer mortality to populations living near nuclear power plants.
80	8-Data on radioactive emissions needs to be monitored in a formal publically accessible database. No government agency has collected the data.	Response 80-8: See Response 80-7.

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Commenter	Specific Comments	Response
81	1-Identical submission as Commenter 60.	Response 81-1: See Responses 60-1 thru 60-6.
82	1-Identical submission as Commenter 60.	Response 82-1: See Responses 60-1 thru 60-6.
83	1-Identical submission as Commenter 16-5.	Response 83-1: See Responses 1-3 and 1-4.
84	1-Identical submission as Commenter 16-4.	Response 84-1: See Response 16-4.
85	1-Identical submission as Commenter 16-5.	Response 85-1: See Responses 1-3 and 1-4.
86	1-Identical submission as Commenter 16-5.	Response 86-1: See Responses 1-3 and 1-4.
87	1-Identical submission as Commenter 16-4.	Response 87-1: See Response 16-4.
88	1-Identical submission as Commenter 16-4.	Response 88-1: See Response 16-4.
89	1-Identical submission as Commenter 16-5.	Response 89-1: See Responses 1-3 and 1-4.
90	1-Identical submission as Commenter 16-5.	Response 90-1: See Responses 1-3 and 1-4.
91	1-Identical submission as Commenter 16-5.	Response 91-1: See Responses 1-3 and 1-4.
92	1-DEC should regulate materials arising from natural gas extraction from deep shale formations in such a way as to keep all life forms within NYS free as possible from the materials' associated radioactivity. DEC should not make arbitrary distinctions by atomic number, or how materials have been processed. DEC should not create exclusions or other regulatory designs that allow deep shale products to contaminate us, or fellow creatures and our environment.	Response 92-1: See Responses 1-1, 1-3, and 1-4.
93	1-Identical submission as Commenter 65.	Response 93-1: See Responses 65-1 through 65-32.
94	1-Identical submission as Commenter 16-5.	Response 94-1: See Responses 1-3 and 1-4.
95	1-Identical submission as Commenter 16-3.	Response 95-1: See Responses 1-3, 1-4, and 14-1.
95	2-Identical submission as Commenter 16-5.	Response 95-2: See Responses 1-3 and 1-4.
95	3-Identical submission as Commenter 16-6.	Response 95-3: See Responses 1-3 and 1-4.
95	4-Identical submission as Commenter 16-7.	Response 95-4: See Responses 1-3 and 1-4.
96	1-Identical submission as Commenter 16-1.	Response 96-1: See Responses 6-4 and 14-1.
96	2-Identical submission as Commenter 16-3.	Response 96-2: See Responses 1-3, 1-4, and 14-1.
96	3-Identical submission as Commenter 16-4.	Response 96-3: See Response 16-4.

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Commenter	Specific Comments	Response
96	4-Identical submission as Commenter 16-5.	Response 96-4: See Responses 1-3 and 1-4.
96	5-Identical submission as Commenter 16-6.	Response 96-5: See Responses 1-3 and 1-4.
96	6-Identical submission as Commenter 16-7.	Response 96-6: See Responses 1-3 and 1-4.
96	7-Identical submission as Commenter 17-5.	Response 96-7: See Response 17-5.
96	8-Identical submission as Commenter 32-5.	Response 96-8: See Responses 1-3, 1-4, and 14-1.
97	1-Apply the federal definition of TENORM to all the stuff coming out of Pennsylvania fracked wells.	Response 97-1: See Responses 1-1, 1-3, 1-4, and 14-1.
98	1-Identical submission as Commenter 16-1.	Response 98-1: See Responses 6-4 and 14-1.
98	2-Identical submission as Commenter 16-3.	Response 98-2: See Responses 1-3, 1-4, and 14-1.
98	3-Identical submission as Commenter 16-4.	Response 98-3: See Response 16-4.
98	4-Identical submission as Commenter 16-5.	Response 98-4: See Responses 1-3 and 1-4.
98	5-Identical submission as Commenter 16-6.	Response 98-5: See Responses 1-3 and 1-4.
98	6-Identical submission as Commenter 16-7.	Response 98-6: See Responses 1-3 and 1-4.
98	7-Identical submission as Commenter 17-5.	Response 98-7: See Response 17-5.
98	8-Identical submission as Commenter 32-5.	Response 98-8: See Responses 1-3, 1-4, and 14-1.
99	1-Identical submission as Commenter 16-1.	Response 99-1: See Response 6-4 and 14-1.
99	2-Identical submission as Commenter 16-3.	Response 99-2: See Responses 1-3, 1-4, and 14-1.
99	3-Identical submission as Commenter 16-4.	Response 99-3: See Response 16-4.
99	4-Identical submission as Commenter 16-5.	Response 99-4: See Responses 1-3 and 1-4.
99	5-Identical submission as Commenter 16-6.	Response 99-5: See Responses 1-3 and 1-4.
99	6-Identical submission as Commenter 16-7.	Response 99-6: See Responses 1-3 and 1-4.
99	7-Identical submission as Commenter 17-5.	Response 99-7: See Response 17-5.
99	8-Identical submission as Commenter 32-5.	Response 99-8: See Responses 1-3, 1-4, and 14-1.

Commenters

- 1 – Karen Biesanz
- 2 – University of Rochester Medical Center: David Conover
- 3 – Camille Doucet
- 4 – Michael Black

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- 5 – Sheila Out
- 6 – Sharon Michales
- 7 – Maryann Roby
- 8 – Community and Policy Studies: Julie Ann Racino
- 9 – Vera Scroggins
- 10 – New York University Langone Medical Center: Steven Wagner
- 11- Albany Hearing - Citizen’s Environmental Coalition: Barbara Warren
- 12 – Weill Cornell Medical Center: Peter Capitelli
- 13 – Entergy: Elise Zoli
- 14 – Deborah Bigelow
- 15 – American Petroleum Institute, Business Council of NYS: Maryann McCarthy & Darren Suarez
- 16 – Thomas Collier
- 17 - Dennis Higgens
- 18 – Caroline Martin
- 19 – Donald Hebbard
- 20 – Roseann Slomontz
- 21 – Richard Komita
- 22 – Anthony Brellen
- 23 – Brian Brock
- 24 – Epifallio Bevilacqua
- 25 – Elizabeth Serrao
- 26 – Katherine O’Donnel
- 27 – Christina Volz
- 28 – Barry Miller
- 29 – Paul Mendelsohn
- 30 – Albany Medical Center: Ebrahim Abdelslam
- 31 – Concerned Citizens of Allegany County: Frederick Sinclair
- 32 – Suzy Winkler
- 33 – Craig Buckbee
- 34 – Roy Yarnell

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- 35 – Peter Hudiberg
- 36 – Daniel Taylor
- 37- Edward Hall
- 38 – Kathy Tussing
- 39 – Liza Zimmerman
- 40 – Amy Harlib
- 41 – Maura Stephens
- 42 – Rich Macejka
- 43 – Marcia Kelly
- 44 – Sylvia Rackow
- 45 – Paula Vance
- 46 – Joseph Quirk
- 47 – Daniel White
- 48 – Stephen Gerard
- 49 – Gerald Ravnitzky
- 50 – Marian Rose, submitted by James Bryan
- 51- Frederick Sinclair
- 52- Kathleen Kelleher
- 53 – Diana Pryntz
- 54 – Barry Noller
- 55 – Edith Kantrowitz
- 56 – Amy Bruce
- 57 – Susan Multer
- 58 – Carol LaBorie
- 59 – Gudron Scott
- 60 – Linda Snider
- 61- Matt Heyden
- 62 – Angela Monti Fox
- 63 – Damascus Citizens for Sustainability: John Zimmerman
- 64 – Sierra Club Atlantic Chapter: Roger Downs

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65 – Alliance for a Green Economy, Citizens Environmental Coalition, Citizens for Water, Coalition on West Valley Nuclear Wastes, Concerned Citizens of Allegany County, Concerned Citizens of Cattaraugus County, Concerned Health Professionals of NY, Damascus Citizens for Sustainability, Gas Free Seneca, Grassroots Environmental Education, Hudson River Sloop Clearwater, Nuclear Information and Resource Service, NYH2O, Promoting Health and Sustainable Energy, Protect Orange County, Seneca Lake Guardian, Sierra Club Atlantic Chapter, Stop the Minisink Compressor Station, Western NY Environmental Alliance, Western NY Peace Center: Barbara Warren

66 – Earth Justice, Earthworks, Environmental Advocates of New York: Elizabeth Moran

67 - Protect Orange County: Pramilla Malick

68 - Nick Mottern

69 - Mimi Koren

70 – Sisters of Charity: Carol DeAngelo

71 – Grassroots Environmental Education: Ellen Weininger

72 – Stop the Algonquin Pipeline Expansion: Susan Van Dolsen

73 – Holly Adams

74 – Rachel Treichler

75 – Frank Brodhead

76 – Paula Clair

77 – Betsy Todd

78 – French Conway

79 – Don Hughes

80 – Council on Intelligent Energy and Conservation Policy, Indian Point Safer Energy Coalition: Michel Lee

81 – Susan McAnanama

82 – George McAnanama

83- Jean Dickenson

84 – Sierra Club Mid-Hudson Group: Joanne Steele

85 – Gary Gilman

86 – Barbara Ciepiela

87 – Owen Gould

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- 88 – David Simpson
- 89 – Kim Rossi
- 90 – David Jackson Bollman
- 91 – Marcia Nandillon
- 92 – James Taft
- 93 – Cheryl Hannigan
- 94 – Dorothy Getty
- 95 – Diana Strablow
- 96 – Karen Ash
- 97 – Cheri Zucker
- 98 – Trellan Smith
- 99 – Margret Taylor