NIAGARA MOHAWK

NMP81204

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June 5, 1991

Ms. Linda J. Downing
Research Assistant
Research Center
SUCO
Oswego, New York 13126

Dear Ms. Downing:

I have reviewed your draft report transmitted to me by correspondence dated May 6, 1991. I can appreciate the effort that you have put forth, however, your lack of complete understanding of the subject matter has produced a critique that contains many apparent misunderstandings of programs and the objectives of such programs. Below is a summary of my comments.

1. The NYSDOH does not conduct a full environmental monitoring program at the Nine Mile Point Site. The NYSDOH conducts a program that is funded by the USNRC for purposes of confirmatory measurements. Therefore, it is not necessary for the NYSDOH to provide a multitude of monitoring stations around the site or to obtain and analyze a multitude of environmental samples.

2. There are many apparent misunderstandings and misconceptions as to program goals and objectives.

3. The programs conducted at the site are basically established to assess the effectiveness of facility effluent controls/monitoring and also to assess any impact to man as a result of routine operation of the facilities. Many of your recommendations appear to disregard these goals.

4. There are many examples of where the regulatory requirements have been misquoted.

5. There appears to be a general lack of understanding of radioecology, health physics, and nuclear power facility operations, all of which are essential in order to comment on sampling program protocols.

Attached are specific comments that I have made. If you have any comments, I can be reached at (315) 349-2428.

Sincerely,

Hugh J. Flanagan Jr.

Hugh J. Flanagan
Supervisor, Environmental Protection

HJF/cat

cc: R. J. Cohen

Comments on the Draft Report Titled
"Nine Mile Point Nuclear
Surveillance Program Summary"

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1. Page 1, paragraph 1, line 6: Variations are not necessarily due to sampling locations and/or types of samples. There are many reasons to explain variations in the data such as analytical equipment, count times, etc. The degree of variation must also be weighed against the level or significance of the detected results.

2. Page 1, paragraph 2, lines 3 and 7: NMP-1 is rated at 610 MWe and NMP-2 is 1080 MWe. These are net electric values. I am not sure about the correct value for the FitzPatrick facility.

3. Page 1, paragraph 3, line 15: NMPC and NYPA use control locations in Jefferson and Onondaga Counties also. It would be inappropriate for a reader to assume that control locations could not be located in Oswego County depending upon the pathway and specific location.

4. Page 2, paragraph 1, line 5: Southwest should be west southwest.

5. Page 2, paragraph 1, line 6-7: This should be worded more clearly to indicate the low wind frequency for this general direction.

6. Page 2, paragraph 3, line 3: Radionuclides are not routinely released into the water.

7. Page 2, paragraph 4, line 2: Samples are not currently collected on-site in order to determine compliance with regulations. Delete "on-site and in proximity to NMP".

8. Page 2, paragraph 4, line 5: The correct title of the regulatory document is the "Technical Specifications". RETS should be deleted here and all other places and replaced by "TS".

9. Page 2, paragraph 4, line 8: The NMP area is considered as a site relative to the Radiological Environmental Monitoring Program (REMP) only. Your statement is in conflict with many regulatory definitions.

10. Page 3, paragraph 1, line 10: The word NYSDOH makes this sentence unclear.

11. Page 3, paragraph 2, line 3: EA Engineering Science and Technology does not collect all samples required by the regulations. This statement is incorrect.

12. Page 3, paragraph 2, line 6: The correct reference is Koeneke not Ellis.

13. Page 3, paragraphs 3-6: This section needs a better introduction. Currently, it is too closely tied to the DOH report in the preceding paragraph.

14. Page 3, paragraph 3: The references for your report are not consistent with your total stated purpose in paragraph 3 (i.e., "gain an understanding of the radionuclide discharges"). I suggest you delete this part of paragraph 3.

15. Page 4, paragraph 2, lines 5-10: The two year meteorological data, which is annual average data, is representative. Obviously, a ten year average would be more exact, but a two year average is representative for purposes of the REMP program. Also, there are slight annual average meteorological differences between release points and the meteorological tower sensor levels. However, these differences are not significant since they are handled conservatively when meteorological data is used to determine environmental locations or to assess offsite impacts.

16. Page 4, paragraph 3, line 2: It is inappropriate to process data in this way. The capability of analytical instrumentation has progressed significantly since 1976. You are assuming that detection capabilities and sensitivity is the same for all years. This is not the case. Any assessment of data must accommodate this information.

17. Page 5, paragraph 1, line 2: The statement "required to be sampled annually" is misleading. This is incorrect.

18. Page 5, paragraph 1, line 4: The statement "in the least prevalent wind direction" is incorrect.

19. Page 5, paragraph 1, lines 13-17: It should be emphasized here that at no time is the highest D/Q area compromised by site accessibility. An exact sample location will usually be selected based on accessibility within a specific D/Q area, but at no time is a different D/Q area used because of accessibility.

20 Page 5, paragraph 3, line 7: The word NYSDOH is incorrect.

21. Page 6, paragraph 1, line 4: A large range of values is not abnormal for the time span observed (1976-1988). There have been many man-made and natural events to explain the differences. You appear to question this as a programmatic problem. I feel this is due to your lack of a "radiological history".

22. Page 6, paragraph 2, line 4: The statement "in the least prevent wind direction" is incorrect.

23. Page 6, paragraph 2, lines 5-10: The statements made here are correct but as presented can be misleading. It must be pointed out that milk sampling locations must be able to provide a stable source of milk on any given sampling day. Although there are milking cows between 3.5-5.0 miles from the site, the owners either do not wish to provide milk samples or there is not a sufficient number of milking animals to provide a stable source of milk. This section should be clarified.

24. Page 6, paragraph 3, line 11: The NYSDOH reference is Huang not Whuang.

25. Page 6, paragraph 3, lines 20-22: One of the NYSDOH locations is the sample location used by NMPC/NYPA. At this location, milk samples are homogenous split samples.

26. Page 7, paragraph 1, lines 3-5: This statement has no basis that is discussed and is inappropriate. A more reasonable explanation is that the samples were obtained in the following year which represented a longer time interval since the 1980 Chinese weapons test. Variations in man-made radionuclides, relative to concentration, need to be evaluated carefully against weapons testing events especially during the late 1970s and early 1980s.

27. Page 7, paragraph 1, lines 8-12: Variations in concentration for I-131, Cs-137, Sr-89, and Sr-90 over a time period of 1976-1988 are not unusual when the frequency and number of weapons tests are considered. The report seems to present the data as suspect. The data looks reasonable considering the weapons testing events.

28. Page 7, paragraph 2, lines 3-6: The Technical Specifications for NMP-2 mentions that ground water monitoring is required only if there are geological events which would change normal ground water drainage. Consult the Off-site Dose Calculation Manual. Drinking water samples are also not required.

29. Page 7, paragraph 3, line 9: The city water sample is an optional sample and is not required. This is also true for the NMP-1 and NMP-2 inlet samples.

30. Page 7, paragraph 4, lines 8-10: There is no requirement to sample the Dempster Beach Road site nor do I see any reasons to do so. Ground water (south of the NMP site) is not required to be sampled. See comment number 28.

31. Page 8, paragraph 4, lines 1-7: The main purpose of environmental TLDs is to monitor direct radiation from the facilities. In this regard, downwind meteorological sectors are not the only criteria used for sighting purposes. In addition, the purpose of the NRC TLDs placed by the NYSDOH is to verify the NMPC/NYPA TLD results. In order to do this, a duplicate set of TLDs (i.e., one at every NMPC/NYPA location) is not necessary.

32. Page 9, paragraph 4, lines 4-10: Fish samples can be made up of one fish specimen or of several specimens depending upon the size of the fish caught (i.e., the larger the specimens, the smaller the number of specimens needed to yield an adequate sample size. Generally, an adequate sample is made up of various sizes of adult fish. The radionuclide concentration in older adult specimens will be slightly greater but the resultant dose difference is insignificant. Considering the objective of this part of the program, listing specimen sizes or ages has no bearing on the results.

33. Page 10, paragraph 1, lines 1-4: The fish sample listed in the NYSDOH report as from the NMP area is a split sample with the NMPC/NYPA sample.

34. Page 10, paragraph 1, lines 4-5: The purpose of the split NYSDOH sample is to verify the NMPC/NYPA results. It is not necessary to duplicate all sampling sites to do this. A control sample point is not needed for the NYSDOH sample.

35. Page 10, paragraph 1, lines 6-9: It is not unusual for the results to vary. The frequency and magnitude of past weapons testing greatly affected the concentration of radionuclides.

36. Page 10, paragraph 3, line 1: There is a difference between soil and sediment relative to the potential radiological content. Sediment should be used here.

37. Page 10, paragraph 3, lines 3-5: The NYSDOH samples and NMPC/NYPA samples are homogeneous split samples. This appears to be a location description problem.

38. Page 10, paragraph 3, lines 10-15: Variation in results from one year to the next are not unusual. Also, note that the sediment location (indicator) changed in 1985 as a result of a change in the Technical Specifications in order to more effectively assess a dose impact. Th-232 is naturally occurring and shows how radionuclide concentrations can vary from year to year or site to site. When sampling is performed similar sediment types are sampled if possible. However, it has been difficult to impossible to get identical sediment types.

39. Page 10, paragraph 4, lines 1-3: The statement was made that, "These changes are not accounted for in any of the reports reviewed". This change was reviewed in the NMPC and NYPA annual reports for 1985. I believe that these reports were not reviewed. I would think that one would review the annual report for the year in which a change was noted.

40. Page 10, paragraph 6, lines 1-7: Samples from one of the NMPC/NYPA sites are split with the NYSDOH. These samples are homogeneous samples.

41. Page 11, paragraph 1, lines 1-4: For those samples that are split with NMPC/NYPA and the NYSDOH, consistency with respect to sample type year after year is not always possible. The highest D/Q locations are sampled and it is not always possible to obtain the same sample types year after year because the locations change (new locations or locations that are no longer available or different sample types are grown). Consistency is not an issue anyway. Vegetation is sampled that could contain radionuclides from deposition or root uptake. The objective here is to sample typical media that is consumed at high D/Q locations and to assess the dose impact. It is not necessary to retain sample type consistency.

42. Page 11, paragraph 2, lines 1-6: Many garden vegetables are also sampled as broadleaf vegetation. For example, cabbage, lettuce, etc. This paragraph seems to make a distinction between broadleaf vegetation and garden vegetables.

43. Page 11, paragraph 2, lines 6-7: The data from table 1H is apparently from the NYSDOH report. NMPC/NYPA sample results from 1976-1990 showed an occasional positive result for Cs-137, which is a common radionuclide found in soil, but no positive results for Cs-134 or Co-60. The data source should be specified.

44. Page 11, paragraph 4, lines 13-14: This sentence appears to say that NMPC/NYPA have some hard copy reports available after 1981. Niagara Mohawk has all annual environmental reports in hard copy form for all years. This sentence may also mean that NMPC/NYPA have some of the NYSDEC/NYSDOH reports after 1981. This is not clear. NMPC has the annual reports issued by the NYSDOH as well as the reports issued to the USNRC by the NYSDOH.

45. Page 12, paragraph 1, lines 7-13: It is not unusual to expect variation in results over the time period of 1976 - 1988. To the trained individual that is familiar with the "history" of radiological environmental results, the reasons and causes for the variation in results are obvious. In addition, the reports issued by NMPC/NYPA for years since 1980 explain the reasons and causes. It is understandable that an untrained person that has not read all of the reports would not be able to determine reasons or causes for variations.

46. Page 12, paragraph 2, lines 1-6: I have reviewed the NYSDEC and NYSDOH reports and I have been able to draw conclusions. The NYS reports have provided a general overview of any potential environmental effects. The inability to draw conclusions may be due to the lack of familiarity with the programs on the part of the author. I am able to compare NYSDOH results and NMPC/NYPA results but I have more information at my disposal in order to perform a comparison.

47. Page 12, paragraph 3, lines 1-5: The purpose of the NYS air monitoring station is to selectively verify NMPC/NYPA results from the same location. Since this monitoring station is in one of the most prevalent downwind locations, it is adequate to perform its intended purpose.

    Noble gases do not have a significant impact on the environment or on man. It is essential that the behavior of any particular radionuclide in the environment as well as its relationship to human physiology be considered. Any impact, as a result of noble gases in the environment, is not assessed through the use of air samples. The impact of noble gases is evaluated by the use of TLDs.

48. Page 12, paragraph 4, lines 1-4: NYSDOH milk sampling sites relative to the NYSDOH/USNRC and NMPC/NYPA program has not remained at a consistent location generally because of the establishment of new greater D/Q locations. This has no bearing on the purpose of the comparison program. Data can be compared to NMPC/NYPA data (see comment number 47 above).

49. Page 12, paragraph 5, lines 1-5: Control locations have been evaluated prior to use. Lake currents, water depths, intake location, current pattern interferences, and computer dilution modeling have all been considered. Sample contamination by fish or water fowl is insignificant at best.

50. Page 12, paragraph 6, lines 1-4: See comment number 31. This is not the intent of the NYSDOH monitoring program.

51. Page 13, paragraph 1, lines 1-7: The statement concerning migratory fish is only partially true. NMPC/NYPA have analyzed those specimens which have been caught. Several species of "non-migratory" fish have been analyzed. Obviously, no local fish species are sessile. However, an example of a species that is territorial and that is analyzed whenever possible is smallmouth bass. In addition, many species have been attracted to the heated effluents (fall - spring) and have remained in these areas for extended periods of time. Gillnets are set near the heated effluents in order to obtain radiological fish samples.

The purpose of radiological fish samples is to assess the impact on man. People do not consume fish bones or internal organs. Fillets are analyzed because people consume fillets. An exception would be smelt. However, smelt are not high on the food chain as larger predatory species such as bass, perch and trout. As such, the potential radiological content is significantly less than species higher on the food chain. Smelt are typically not analyzed.

52. Page 13, paragraph 2, lines 1-2: This statement is untrue. Although sand is available, other types are also available including soil based shorelines. The sediments in the vicinity of the site have been found to absorb radionuclides.

53. Page 13, paragraph 3, lines 1-3: The purpose of the vegetation sampling program is not to compare the radiological deposition or uptake of one species to another. The purpose is to perform a dose impact. This does not require a consistent vegetation type.

54. Page 13, paragraph 4, line 1: It appears from your study that information is not readily available from the public document rooms. This should be clarified.

55. Page 13, paragraph 6, lines 1-11: This recommendation is not consistent with the intent and objectives of the NYSDOH/USNRC program. See comment number 47.

56. Page 13, paragraph 7, lines 1-6: Meteorological data and assessment is not necessary for each air sample. This is based on the objective of the sampling program. The assess/evaluation of air monitoring data is based on a one year time interval, not short discrete sample periods. During an unusual or emergency situation, however, meteorological data is evaluated in order to assist with short term evaluations and positioning of portable air sampling and/or radiation detection equipment.

57. Page 14, paragraph 1, lines 1-3: Providing D/Q or X/Q values in annual reports for air monitoring locations is not protocol and is not consistent with the intent of annual reports.

58. Page 14, paragraph 3, lines 1-4: Providing air monitoring locations over Lake Ontario is not consistent with the objectives of the monitoring programs. There is no assessment capability relative to individuals because of the distance to land masses. Any potential deposition over the lake, relative to a moving water body, would have an insignificant and immeasurable impact.

59. Page 14, paragraph 4, lines 1-6: Variations in radionuclide concentrations are explained in NMPC/NYPA annual reports.

60. Page 14, paragraph 5, lines 1-2: Any potential minor impacts for noble gases are monitored. See comment number 47.

61. Page 14, paragraph 6, lines 1-3: A few of the off-site maps in the annual reports are "busy". Reprints or copies of reports will obviously reduce clarity. Maps presented in original reports issued by NMPC are adequate to locate environmental sample locations, however, there is room for improvement. It is difficult to show sample locations relative to roadways that cover large areas. Using a series of maps covering small areas would lose the sampling locations' perspective relative to the NMP site. This situation is currently being evaluated and improvements will be made in the future. In the meantime, it is suggested that original report copies issued by NMPC/NYPA be evaluated since the clarification of these maps is much better. In addition, the staff at the NMP site are always available to assist in locating sampling sites on maps from annual reports or other questions that may arise.

62. Page 14, paragraph 8, lines 1-5: It should be stated that the comments relative to the frequency of Sr-90 analyses and consistency of sampling sites for Sr-90 in milk apply to the NYSDOH report.

63. Page 14, paragraph 9, lines 1-4: It should be stated that this paragraph (as well as its continuation on page 15) applies to the NYSDOH reports.

64. Page 15, paragraph 2, lines 1-4: Additional water sampling is performed for unusual releases where there is a potential impact to water bodies. Facility airborne effluents after refueling or during containment purging are not unusual releases. These types of effluents do not impact surface water pathways.

65. Page 15, paragraph 4, lines 1-3: Groundwater monitoring is not required or necessary (see comment number 28). On-site monitoring for spills or leaks is performed.

66. Page 15, paragraph 5, lines 1-3: The Oswego Steam Station is an adequate control location. See comment number 49.

67. Page 15, paragraph 6, lines 1-5: Surface water sampling is currently conducted at areas that have the greatest potential for detection. Sampling at other areas further "down current" from the site would make the detection of radionuclides very difficult. Computer dilution modeling has supported this conclusion.

68. Page 15, paragraph 7, lines 1-5: Monitoring for plutonium in environmental samples of water and sediment is not currently conducted because this radionuclide is an insignificant component in effluent samples. Concentrated low level radioactive waste is typically analyzed for plutonium. Little or no detectable levels of plutonium are detected. Plutonium at nuclear power facilities, relative to its presence in effluents, is associated with damaged fuel or fuel of very poor integrity. In the event of damaged or failed fuel at NMP and a notable relative presence of plutonium in concentrated radwaste samples, then plutonium, as well as other radionuclides, would be considered for analysis in environmental samples. In addition, effluent samples are analyzed for gross alpha counts which would show any unsual levels of plutonium or other alpha emitters. At the present and considering the history of nuclear fuel at NMP, a monitoring program for plutonium would serve no cost benefit. Plutonium is more of a concern at fuel reprocessing facilities where plutonium is separated from used fuel. Obviously, reprocessing activities do not occur at NMP.

69. Page 15, paragraph 9, lines 1-5: This TLD program recommendation is not consistent with the program objectives (see comment number 31).

70. Page 16, paragraph 1, lines 1-5: These statements are incorrect. There are other factors that impact the location of TLDs. In addition, the objective of the NYSDOH/USNRC TLDs is not to provide for a complete TLD monitoring system around the site (see comment number 31).

71. Page 16, paragraph 1, lines 5-7: D/Q values are not used to determine environmental TLD locations.

72. Page 16, paragraph 2, lines 1-5: One of the NMPC/NYPA TLDs is in close proximity to the NYSDOH/USNRC TLD. This situation is adequate to compare TLDs. It is important that the objective of the NYSDOH/USNRC program be considered here. Overall, paragraph 2 in the report is incorrect.

73. Page 16, paragraph 3, lines 1-3: The NYSDOH and NMPC/NYPA reports are compliance reports, not research reports. This information is available from NMPC/NYPA. The NMPC annual environmental report references where this information can be found.

74. Page 16, paragraph 4, lines 1-3: From a professional point of view, I would be very hesitant to use Gofman as a reference. It is not necessary to establish TLD control locations beyond 50 miles during normal operating conditions. The locations of NMPC/NYPA environmental TLDs are based on computer dispersion modeling.

75. Page 16, paragraph 5, line 1: It is not necessary to monitor bottom sediment. This media is not a direct pathway for an impact assessment. From an assessment point of view, any results from bottom sediment sampling are strictly qualitative.

76. Page 16, paragraph 5, lines 2-10: The remainder of this paragraph is untrue and lacks detailed analysis. The Sunset Beach area currently acts as an accumulation area for sediments. In addition, this is an area in relative close proximity to the site where potential waterborne radionuclides would not be subjected to significant dilution. These facts, as well as other information including observations, were carefully considered prior to selecting this location.

    The sediments near NMP are able to absorb and accumulate radionuclides. This has been demonstrated by sample data.

    Sediment traps are not necessary and would provide samples that do not meet the objectives of the program. One of the objectives of the shoreline sediment sampling program is to assess the direct radiation dose to man as a result of shoreline activities. Sediment from traps would not be representative.

    The characterization of sediment type has been discussed in the past and will be under renewed evaluation and consideration.

77. Page 16, paragraph 7, lines 1-2: It is not clear what deep water offshore core samples would provide. It is not clear how these samples would fit into the objectives of the program or what value such samples would provide relative to the objectives.

78. Page 17, paragraph 1, lines 1-3: The fish species analyzed by NMPC/NYPA are fairly consistent. Obviously, species availability will dictate what is analyzed. Comparison of yearly fish data using the same species is not a program objective. This comment is not applicable to the program.

79. Page 17, paragraph 1, lines 3-7: Fish samples can be comprised of several fish specimens mixed together in order to get an adequate sample size for analysis. Occasionally, samples may be comprised of a single specimen. Where samples are comprised of several specimens, physical parameters such as length, weight, sex, etc., would be of little use. In addition, the program objectives do not include an assessment of radionuclide accumulation by species of fish or by size category for specimens of the same species. Although parameters such as length, weight, sex, etc. would be necessary in order to assess "the uptake potential of radionuclides", "the uptake potential" of different species is not an objective of the program and has little relationship to the dose impact assessment that is performed.

If one were to do an "uptake" study, one factor that would have to be considered, that the report did not mention and that would be paramount, is age.

80. Page 17, paragraph 2, line 2: The correct reference is Koeneke, not Ellis.

81. Page 17, paragraph 2, lines 8-12: Split samples between NMPC/NYPA and the NYSDOH are essentially homogeneous and are comparable. In this case, tissue from the same fish or specimens from the same species are processed to provide two homogeneous samples.

82. Page 17, paragraph 2, line 12: The reference to duplicate analysis is incorrect. The objective and protocol of the split sample program does not call for duplicate analyses. It is not clear whether this is a case of improper use of the term or whether this was the intent of the report. With respect to the latter, duplicate analyses can pose problems which could compromise validity of the data as well as security and "archiving" of samples.

83. Page 17, paragraph 3, lines 1-4: Adult fish species are utilized for compliance samples. Juvenile fish are not utilized. The age factor is generally considered in the selection of specimens.

84. Page 17, paragraph 4, lines 1-3: All species are used for radiological samples that are of adequate mass. Territorial species are of prime interest and are used where available. Not all migratory species behave as such at the NMP heated effluent areas (see comment number 51).

85. Page 17, paragraph 5, lines 1-11: Benthic organisms are not useful for monitoring purposes in order to meet the objectives of aquatic sampling programs. Benthic organisms are not a direct pathway to man relative to dose assessments. This comment is specific to the NMP site. For example, some facilities at marine sites sample lobsters, oyster, clam, crabs, etc. because these organisms provide a direct ingestion pathway to man.

In reference to zebra mussels, I am confident that these mussels can accumulate radionuclides. NMPC/NYPA may analyze samples of zebra mussels in the future but such an effort would be for purposes of interest only.

86. Page 17, paragraph 6, lines 1-6: Gillnets are set for the purpose of obtaining fish samples in the vicinity of the NMP-1 and JAFNPP lake discharge structures. These locations provide fish samples that have been exposed to maximum possible radionuclide concentrations not only from direct contact and ingestion but also from the food chain in the general area. Fish samples obtained "downstream" would not consider a maximum exposure potential from the pathways noted above.

The current control location for obtaining fish samples is adequate (i.e., Oswego Harbor area). Not only does the Oswego River influence this area as a control location but other sample media has shown this to be the case.

87. Page 18, paragraph 1, lines 1-2: Fish bone and specific organs are not representative of this pathway. Fish bone and specific organs do not need to be sampled. See comment number 51.

88. Page 18, paragraph 2, lines 1-5: Vegetation samples must be obtained from locations of greatest radionuclide deposition potential. Sampling the same location every year is not only a potential violation of regulatory requirements but would also not provide representative data upon which conservative assessments could be made.

NMPC/NYPA vegetation data can be compared to NYSDOH/USNRC data. This may not be evident from the annual report published by the NYSDOH for radiation levels within New York State but is evident in reports sent to the USNRC and NMPC/NYPA. Also note that NMPC/NYPA and NYSDOH/USNRC split samples are homogeneous and data are, therefore, comparable. Also refer to comment number 41.

89. Page 18, paragraph 3, lines 7-10: Relative to the NMPC/NYPA and NYSDOH/USNRC split samples, a location of high radionuclide potential is always utilized and is based on careful review of D/Q data.

90. Page 18, paragraph 4, lines 1-5: In the past, the NYSDOH preferred samples of both broadleaf and non-broadleaf vegetables. More recently, however (late 1980s), the NYSDOH has preferred only broadleaf samples (for NMPC/NYPA and NYSDOH/USNRC split samples). Non-broadleaf samples are no longer collected for the NMPC/NYPA and NYSDOH/USNRC comparison program.

Abundance, depending upon the location and circumstance, can be a dictating factor for determining what is sampled. Relative to the NMPC/NYPA and NYSDOH/USNRC split program, a particular high D/Q location may only have one type of broadleaf vegetation that is abundant enough to provide an adequate sample size or the land owner may only allow the most abundant type of vegetation to be sampled. The statement relative to abundance being a dictating factor is not realistic.

91. Page 18, paragraph 5, lines 1-10: The use of a device to collect total deposition in lieu of a broadleaf vegetation sample is not in agreement with the objectives of the vegetation sampling program. As has been noted in many of the preceding comments, one of the basic objectives for sampling programs is the dose impact/assessment to man.

It should be noted that any deposition that is washed off broadleaf vegetation will be potentially available for uptake by vegetation during a period subsequent to any rainfall incident. Any uptake by vegetation would be assessed during the normal sample analysis and would be consistent with the program objectives.

92. Page 18, paragraph 6, lines 1-2: Samples of meat are occasionally obtained from control and indicator locations. All types of grazing animals normally used as sources of meat are considered. This includes venison. However, venison has not been able to be obtained in many years either because it is not available (deer from the immediate local area) or because individuals are not interested in providing samples. For circumstances where many samples of meat are available, D/Q values are used as selection criteria.

93. Page 19, paragraph 3, lines 1-6: It is not clear from this paragraph of the report exactly what reports are inconsistent in their use of scientific notation, or that need improved and consistent data reporting. This should be specified.

94. Page 19, paragraph 4, lines 1-4: The inclusion of D/Q values for all locations is not standard protocol. It is also not necessary in order to demonstrate compliance with regulatory requirements and is beyond the scope of the NMPC/NYPA reports.

95. Page 19, paragraph 5, lines 1-3: It is not clear from this paragraph of the report exactly what reports are referenced. The NMPC/NYPA reports list required LLDs (lower limit of detection) for many radionuclides and the pathways that are sampled.