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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of

:

DOMINION NUCLEAR CONNECTICUT, INC. :Docket Nos. 50-336-LR,
50-423-LR

(Millstone Nuclear Power Station,
Units 2 and 3)

:

:ASLBP No. 04-824-01-LR

**CONNECTICUT COALITION AGAINST MILLSTONE
MOTION FOR RECONSIDERATION
AND REQUEST FOR LEAVE TO AMEND PETITION**

The Connecticut Coalition Against Millstone ("CCAM") moves herewith for reconsideration of the Atomic Safety and Licensing Board's ("Board") Memorandum and Order (Ruling on Standing and Contentions), LBP-04-15, issued on July 28, 2004, by which it dismissed the Coalition's Petition to Intervene and Request a Hearing on the application of Dominion Nuclear Connecticut, Inc. ("Dominion") to extend the operating licenses for Millstone Nuclear Power Station Unit 2 to the year 2015 and Unit 3 to the year 2025.

CCAM further seeks leave to amend its petition to provide further support for its contentions.

In support of this motion, CCAM attaches hereto and incorporates by reference herein affidavits, with attachments thereto, on behalf of the following:

1. Ernest J. Sternglass, Ph.D., Professor Emeritus of Radiological Physics at the University of Pittsburgh School of Medicine;
2. Joseph J. Mangano, National Coordinator of the Radiation and Public Health Project (RPHP) based in New York, N.Y.;
3. Cynthia M. Besade;

4. Carol Ward;
5. Milton C. Burton;
6. Michael Steinberg.

With regard to each of the contentions submitted by CCAM, the Board determined each was inadmissible.

CCAM argues herein that such conclusions are not justified on the facts or the law and further argues that considerations of the public interest compel reconsideration in light of the information provided in the referenced affidavits and attachments thereto.

1. Contention 1 - Health

CCAM's first contention asserts that:

- (a) the "routine and unplanned releases of radionuclides and toxic chemicals into the air, soil and water have caused death, disease, biological and genetic harm and human suffering on a vast scale," and (b) "cancer clusters have been identified in many areas close to Millstone" since Units 2 and 3 became operational and that the cancers "are scientifically and medically linked to the routine and unplanned emissions of Millstone."

Dominion and the NRC Staff ("Staff") both refute this contention.

Dominion's application for license renewal nowhere addresses the issue of the effects on human health from the continued emissions to the air and water of radioactive effluent. See application.

As CCAM argued at the Board's June 30, 2004 proceedings, this issue is implicated in relicensing proceedings which require an analysis of whether the

licensee can, for instance, assure the reactors can be safely shut down during the relicensing term.

As stated, CCAM intends to rely in part on government documents which have compiled Millstone radioactive effluent emission history.¹ The government documents alluded to refer as well to the State of Connecticut Department of Public Health Connecticut Tumor Registry, and in particular the Connecticut Tumor Registry's publication entitled "Cancer Incidence in Connecticut Counties, 1995-99." This document was referred to in the declaration of Michael Steinberg, which was implicitly accepted by the Board despite its asserted lateness,² and in CCAM's arguments to the Board on June 30, 2004.³ The official Connecticut Tumor Registry report released in January 2003 concludes that cancers affecting women are at their highest level in the New London area surrounding Millstone, in comparison with other areas within the state. The report finds that cancers affecting men in the New London area are exceeded only by cancer rates in Tolland County.⁴ Mr. Steinberg's further examination of the Tumor Registry report appears on the NRC's website and is available in ADAMS ML041770179.

The meaning of the term "safety" is critical to this discussion, as CCAM argued at the Board's June 30, 2004 proceedings.⁵ This issue is implicated in relicensing proceedings which require an analysis of whether the licensee can,

¹ Some of these documents are referenced in Millstone and Me (Steinberg), and see e.g., Dominion Nuclear Connecticut, Inc. Millstone Power Station Units 1, 2 and 3 2003 Annual Radiological Environmental Operating Report of April 28, 2003 (available on NRC website at ADAMS, ML041270333) and Dominion Nuclear Connecticut, Inc. Millstone Power Station Units 1, 2 and 3 2003 Radioactive Effluent Release Report of April 29, 2004, Volumes I and II. (also available on the NRC website).

² LBP-04-15 at 12.

³ Transcript of June 30, 2004 proceedings (hereinafter referred to as "TR") at page 29

⁴ TR at 29

⁵ TR at 30-31, 37-40.

for instance, assure the reactors can be safely shut down during the relicensing term.

The operational history of the Millstone nuclear reactors is instructive. As recently as March 7, 2003, Millstone Unit 2 suffered a reactor trip – and was not safely shut down. Over a 24-hour period following the trip, an “abnormal” release of radioactivity occurred which was acknowledged by Dominion to be “an increase in airborne radioactive material released to the environment that was unplanned or uncontrolled due to an unanticipated event. . . . The amount of iodines released was higher than normal due to fuel defects.”⁶

As the affidavits of Dr. Sternglass and Mr. Mangano declare, extremely small doses of radioactivity carry with them serious health consequences. These health consequences may not be immediately apparent, but they can cause devastating illness and death.

It is CCAM's position that in the present relicensing proceedings, it is incumbent on the regulating authority to consider issues relative to safety in the context of current knowledge and information about the human health effects of even low doses of ionizing radiation. Sternglass Affidavit at paragraph 28; Mangano Affidavit at paragraph 11.

Dr. Sternglass points out that the Journal of the American Medical Association has recently published a study linking dental X-rays at low doses to pregnant women in their first trimesters and subsequent low birth weight. Sternglass Affidavit at paragraph 27.

⁶ See Dominion Nuclear Connecticut, Inc. Millstone Power Station Units 1, 2 and 3 2003 Radioactive Effluent Release Report at 2.1.4.

CCAM's contention is not based on theory alone. The Affidavits of Cynthia M. Besade, Michael N. Steinberg, Carol Ward and Milton C. Burton attest to personal and indirect familiarity with more than 67 victims of cancer who either worked at the Millstone Nuclear Power Station or lived nearby or spent considerable time in the immediate area. Certainly their affidavits do not comprise an exhaustive identification of cancer victims in the Millstone community nor among former Millstone workers.

The fact of high rates of cancer among women, men and children in the Millstone community – and planned and unplanned releases of radioactivity from Millstone to the environment - have previously been documented but to date have not been addressed in the ongoing “monitoring of Millstone operations by the NRC.

The present application is missing a significant chapter: a chapter seriously identifying and analyzing the health crisis CCAM believes Millstone has played a significant part in bringing to bear upon its host community.

CCAM has demonstrated its first contention is legally admissible.

2. Contention 2 -Terrorism

CCAM contends in its second contention that Millstone Units 2 and 3 are terrorist targets of choice. The amended petition further states:

The federal Office of Homeland Security has identified the Millstone Nuclear Power Station as a primary terrorist target. It is an unprotected nuclear weapon awaiting detonation. As long as Units 2 and 3 generate electricity, the facility is a key element of the region's infrastructure and all the more appealing as a terrorist

target. As a nuclear weapon, Millstone possesses the radiological potential of thousands of Nagasaki and Hiroshima-size bombs. While it is operating, Millstone cannot be protected against a malevolent attack.

The Board determined that this issue cannot be considered in a relicensing proceeding in light of the NRC decision in CLI-02-26 released on December 12, 2002 ("McGuire").

In the intervening time since the McGuire decision was released, the federal 911 Commission has released its report of the September 21, 2001 terrorist attacks, including in its findings that the terrorist masterminds considered diving fully fueled passenger jumbojets into the Indian Point Nuclear Power Plant 29 miles north of New York City – instead of flying directly over it as actually occurred.

In common with Indian Point – and in contrast to the McGuire and Catawba facilities in the Carolinas - Millstone is a critical component of the infrastructure of the Northeast Corridor linking metropolitan New York to metropolitan Boston. In common with Indian Point, Millstone is located on the shores of a water body near densely populated areas close to airports and it was not constructed to standards that would repel or resist such an attack.

CCAM re-asserts that the Millstone Nuclear Power Station has been identified by the federal Department of Homeland Security as a primary terrorist target. CCAM does not have access to the Department of Homeland Security's records. However, this fact was reported by then-Governor John G. Rowland to the news media in his release of a letter to the federal agency referencing that agency's

identification of Millstone as a "Connecticut site of 'high interest' for additional security protection."⁷ Other media reports have quoted the federal agency staff as identifying Millstone as a primary terrorist target.

In light of these circumstances, the NRC should re-assess the rationale it expressed in McGuire in support of its disinclination to permit consideration of potential acts of terrorism in reactor relicensing proceedings.

The present application is seriously deficient in completely lacking information as to how the facility will be refurbished to withstand terrorist attack – or the design basis accidents which will most probably occur in the event of a terrorist attack.

CCAM has demonstrated its second contention is legally admissible.

Contention 3 - NPDES Permit

In contention 3, CCAM asserts that Millstone Units 1 and 2 operations require the uninterrupted flow through intake and discharge structures of cooling water, which conduct requires a valid National Pollution Discharge Elimination System permit and the facility lacks such a valid permit.

CCAM asserted in its Amended Petition applicant has submitted false information with regard to its permit status. As an example, Dominion represented that it had filed complete documentation of its NPDES permit.

However, Dominion withheld its Emergency Authorization ("EA") as issued by the Department of Environmental Protection in 2000.⁸ This EA derives from earlier EAs which the DEP began to issue to Northeast Utilities

⁷ See Hartford Courant, December 12, 2003, "Rowland: 'Let Us Do the Worrying'"

⁸ See TR at 82.

("NU"), Dominion's predecessor, to enable it to legally conduct the activities for which it pleaded guilty to conducting as federal felonies in 1998. CCAM appends hereto a copy of the EA. The permit itself has expired as a matter of law; furthermore, the Connecticut Department of Environmental Protection has authorized waiver of the expired permit outside its lawful authority by virtue of the EA. In effect, Millstone has been operating with illegal "emergency authorizations" routinely since 1998. See attached statement of DEP Commissioner Arthur J. Rocque, Jr. ("I really hate these [EAs]. Statutes are very limited in what the [sic] define as 'emergency.' Continuing emergency is not even contemplated.")

The parties are in material dispute as to the validity of the NPDES permit and Dominion has submitted erroneous information with regard to the permit.

CCAM has demonstrated its third contention is legally admissible.

3. Contention 4 – Irreversible Harm to the Environment

CCAM asserts in its fourth contention that the operations of Millstone Units 2 and 3 have caused devastating losses to the indigenous Niantic winter flounder population; the operations of Millstone Units 2 and 3 have caused irreversible damage to the marine environment; and continued operations will increase the severity of the environmental damage.

CCAM has demonstrated its fourth contention is legally admissible.

The applicant's submissions acknowledge that Millstone operations have contributed to the collapse of the Niantic winter flounder; however, the applicant

attributes the collapse principally to other causes, including supposed overfishing.

On this point, there is a substantial difference as to material facts.

During the June 30, 2004 proceedings, CCAM quoted from a passage contained in one of the state DEP documents intended to be offered as evidence in these proceedings as follows:

The adult flounder stock size in the Niantic River has already declined by 95% from 1986 (76,180 fish) to 2002 (4,124 fish).

This DEP memorandum, and others, support CCAM's contention that Dominion is principally responsible for the ongoing devastation to the local fish stocks and the marine environment, contrary to the representations contained in the application.

The NRC staff reviewing the application have had no difficulty identifying pertinent documents from state records.⁹ CCAM, as stated, is prepared to produce all pertinent documents from governmental records and other sources to prove this disputed contention at hearing.

5. Contention 5 – Technical Defects

CCAM asserts in Contention 5 that both Units 2 and 3 suffer technical and operational defects which preclude safe operation. These defects have led to numerous unplanned shutdowns when the reactors go from 100 per cent power to zero power in less than one second – an extraordinary physical phenomenon which necessarily and obviously exposes the reactors and their components to

⁹ See attached three letters to the NRC file from Richard Emch, project manager, dated May 24, 2004, May 24, 2004 and June 1, 2004.

sudden changes in heat and pressure of great magnitude. These experiences cause mental fatigue and embrittlement.

The applicant has not addressed this issue nor factored it into its analysis

During the June 30, 2004 proceedings, the following colloquy occurred:

Judge Young: The earlier part that you mentioned, that there was a part that talked about operating experience, in that portion is there any specific discussion of the shutdown history or –

Mr. Lewis: I don't think so. I don't think there is – I mean, and I think that the experience that we've looked at is: when have failures occurred, and why have they occurred, and what have people done to fix them? So I don't think that there is a specific discussion of, you know, what's been the shutdown history of the plant.

TR at 163.

CCAM appends hereto an exhibit, produced by Dominion in other proceedings, which purports to list Unit 2 and Unit 3 shutdowns and their triggering events. On May 5, 2003, Dominion was notified by the NRC that it had crossed the threshold from "Green" to "White" for "Unplanned Scrams Per 7000 Critical Hours." There had been four unplanned scrams between November 2003 and April 29, 2004.¹⁰

Unit 2's history of excessive numbers of scrams is an issue material to these proceedings because it directly implicates the quality and depth of the applicant's aging management assessment.

¹⁰ See Letter to David A. Christian dated May 5, 2004 from A. Randolph Blough, attached hereto.

Although the applicant, under leading questioning by the Board,¹¹ stated that it had looked at "historical" information in informing its analysis, and although the applicant cited to Section 4.3 of the Unit 2 and Unit 3 applications, it appears upon review of each section that the discussion of metal fatigue and its implications for the two reactors is closely mirrored, with no discussion of Unit 2's history of excessive unplanned shutdowns and, hence, their effect on aging.

There is indeed a dispute as to material facts which can only be addressed at a hearing.

Similarly, the Board was incorrect in rejecting CCAM's contention as regards Tables G-3-2 and F-3-1 and the SAMA analysis. The Board incorrectly concluded that CCAM's contention challenged an NRC policy, when it clearly challenged decisionmaking which may permit Dominion to avoid implementation of safety measures to protect the public in a design basis accident. It is CCAM's position that, once having been identified as features which would aid in protection of the public under such circumstances, these features should not be rejected on pure cost-benefit analysis grounds.

As to the SAMAS issue, and as to CCAM's other issues of technical defects, CCAM has demonstrated its fifth contention is legally admissible.

Contention 6 – Evacuation

In its Sixth Contention, CCAM argues that neither Connecticut nor Long Island can be evacuated, although both may be required to be in the event of a terrorist attack, in the aftermath of a terrorist attack leading to a design-basis accident, or otherwise when necessary.

¹¹ See TR at 153, 159

The Board determined that evacuation plans are outside its purview in relicensing proceedings. Its rationale is based in part on its reliance that the NRC adequately updates emergency evacuation plans as appropriate.

However, this reliance is misplaced. At best, the evacuation zone encompasses a ten-mile radius from Millstone. Current circumstances and faithfulness to reality and common sense dictate that Suffolk County, Long Island, with its 1.75 million residents – not to mention the residents of Hartford, the state's capital, and New Haven, the state's educational and cultural capital and all points in between which are within 50 miles of Millstone -should be included in the evacuation plan although they are just a few miles beyond the 10-mile radius.

CCAM has demonstrated its sixth contention is legally admissible.

Respectfully submitted,



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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

DOMINION NUCLEAR CONNECTICUT, INC.: Docket Nos. 50-336-LR,
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: ASLBP No. 04-824-01-LR

DECLARATION OF ERNEST J. STERNGLASS

I, Ernest J. Sternglass, do hereby declare as follows:

1. I am above the age of eighteen (18) years and I believe in the obligation of an oath.
2. I reside at 4601 Fifth Avenue in Pittsburgh, Pennsylvania, 15213.
3. I submit this declaration in support of Connecticut Coalition Against Millstone Intervention in the above referenced matter.
4. I am Professor Emeritus of Radiological Physics at the University of Pittsburgh School of Medicine and have written and published extensively in the area of low-level radiation and human health, and about the adverse effects of radioactive emissions from the Millstone Nuclear Power Station in particular.
5. I am the author of the book "Secret Fallout: Low-Level Radiation from Hiroshima to Three-Mile Island" published by McGraw-Hill in 1981, of the review article "Environmental Radiation and Human Health" published by the University of California Press in 1972, and the article "Cancer Mortality Changes Around Nuclear Facilities in Connecticut" published in "Radiation Standards and Human Health: Proceedings of a Congressional Seminar February 10, 1978, by The Environmental Policy Institute in Washington DC. The facts and statements contained in these publications are incorporated by reference herein as references 1, 2 and 3 respectively.
6. I have published a series of papers on the effects of low-level environmental radiation on human health and development produced by nuclear weapons tests and reactor releases for the last

forty years, and have testified on this subject at hearings held by the U.S. Congress, the National Academy of Sciences, State Legislatures and U.S. Government Regulatory Agencies as an expert on this subject.

7. It is my professional opinion that the radioactive releases from the Millstone Nuclear Power Station since its startup in 1970 have caused and will continue to cause excess infant mortality, low birthweight, leukemia and cancer as well as increased rates of both chronic and infectious diseases in the towns around Millstone as well as in New London County and Connecticut as a whole.

8. According to the NRC publication "Radioactive Materials Released From Nuclear Power Plants" (NUREG /CR -2907), by 1987 Millstone had released a total of 32 Curies of radioactive Iodine and Particulates into the air which include the highly carcinogenic Strontium-90 and Iodine -131, together with 6.7 million Curies of Total Fission and Activation gases such as Xenon and Krypton, and the highest liquid releases of Mixed Fission and Activation Products of any nuclear plant in the United States, namely 581 Curies or 581 trillion picoCuries, the unit of concern in milk and drinking water.

9. In a single year, 1975, Millstone released a record high of 9.99 Curies of Iodine and Particulates into the air, more than twice as high as the 4 Curies released shortly after startup in 1971, together with 29.7 million Curies of Total Fission and Activation Gases, and 199 Curies of liquid Mixed Fission and Activation Products into Long Island Sound, also a record for all U.S. nuclear reactors.

10. Between startup of Millstone in 1970 and 1975, as shown in the 1978 Millstone report (3), cancer mortality rose 58% in Waterford where the reactor is located, 44% in New London 5 miles to the north-east, 27% in New Haven 30 miles to the west, 12% for the State of Connecticut as a whole, 8% in nearby Rhode Island, 7% in Massachusetts and 1% in New Hampshire, while it actually declined by 6% in the most distant New England state, Maine, following the pattern of Strontium-90 in the milk shown in the same report.

11. As shown in Table 9 of reference (3), while the Strontium-90 concentration in the milk declined for the U.S. as a whole between 1970 and 1975 from 8 picoCuries per liter to only 3 pCi/l, it rose from 9.8 in 1970 to a high of 15.8 in 1973 and 14.8 in 1974 near the Millstone Nuclear Plant, remaining at 10.7 by 1975. This is far in excess of the U.S. average of 3 pCi/l, ruling out any significant contribution to the local milk from bomb test fallout by France and China that continued until 1980.

12. As shown in Table 10 of reference (3) the calculated yearly radiation dose to bone of a child due to the excess Strontium-90 within 10-15 miles of the plant in excess of the yearly dose for the U.S. rose from 33 millirem per year in the first full year of operation to 204 mrem/yr by 1974, nearly three times the normal background level of 70 mrem/yr in Connecticut.

13. These doses due to Strontium-90 alone may be compared with the 15 mrem/yr to any organ permitted under current NRC regulations, the 2 mrem produced to bone marrow in a typical chest X-ray of a child, and the 80 mrem/yr to a developing fetus found to produce a doubling of the rate of childhood leukemia in the studies of Dr. Alice Stewart cited in Reference 7 of reference (3) for exposure in the mother's womb to X-rays in the first three months of pregnancy.

14. These considerations, later supported by the more recent studies of Strontium-90 measured in baby teeth together with effects on cancer incidence and infant mortality as reported by Mangano submitted in the present case and referred to here as reference (4) provide overwhelming evidence for the existence of a causal relationship between the abnormally high levels of Strontium-90 in the milk and the pattern of cancer changes at various distances from the Millstone plant.

15. The existence of a direct causal relationship between Strontium-90 released from nuclear reactors and an increased risk of cancer is very strongly supported by the finding described by Mangano (4) that baby teeth of children diagnosed with cancer have close to double the concentration of Strontium-90 than children born the same year and in the same area. This finding has led to a lawsuit having been filed in Florida against the Florida Power and Light company by the family of a child with a very high Strontium-90 tooth concentration seeking compensation, a suit which a federal judge ruled to be of sufficient merit to go to trial in 2005, despite efforts of the defendant to have it dismissed (5).

16. As pointed out in reference (3), this conclusion is still further supported by the fact that the types of cancer that rose most strongly in the Connecticut area near the Millstone Nuclear Plant are exactly those that have been found to be most sensitive to radiation in earlier studies by national and international standard setting organizations, namely those that increased the most by 1975, such as respiratory cancers (37%), breast cancer (12%), and pancreatic cancer (32%).

17. Likewise, further support for a causal relationship of nuclear plant releases and adverse health effects is provided by the fact cited by Mancuso et al.(5) cited in reference (1) that cancer deaths showed a much greater rise in women than in men, namely 17% for white women and only 11% for

white males. This same difference between males and females was found by Mancuso and his co-investigators for atomic workers at the Hanford Nuclear Plants exposed to low doses of both internal exposures to critical organs due to inhaled and ingested radioactive elements similar to those released by Millstone over a period of years, together with protracted external exposures from gamma rays produced by fission products accumulated on the ground, rather than to very short X-ray exposures used in diagnostic procedures.

18. A renewed rise in infant mortality in the six towns nearest Millstone took place after a sharp decline by 18% when all three units had been shut down for most of 1996-97 as described in Table 9 of the 2004 report by Mangano (4), with a smaller decline of 3.1% in 1998-99 relative to 1994-95, followed by a rise of 8.8% in 2000-01. This is very strong evidence indicating that even the much smaller releases from the two remaining PWR type of reactors continue to adversely affect the health of the newborn so that there can be no safe operation of any existing type of nuclear plant for the developing children on whom the future of our nation depends.

19. The much greater risk to human health from radioactive gases and particles that are inhaled or ingested and concentrate in certain critical organs such as the bone marrow or in hormone producing glands such as the pituitary gland targeted by the highly radioactive daughter product of Strontium-90, the element Yttrium-90 that has different chemical properties and leaves the bone to concentrate in soft tissues. This results in very high local doses to both the bone marrow and the critical hormone producing glands over long periods of time that greatly exceed the whole-body dose and result in cancer and other adverse effects on health hundreds to thousands of times greater than had been expected by a linear extrapolation to low doses of the risk from short external exposures such as received by the survivors of Hiroshima and Nagasaki or individuals exposed to medical X-rays that do not concentrate in specific organs, as described in the ECRR report (6).

20. It is important to note that exposure to low levels of Strontium-90 and other bone seeking radioactive chemicals routinely released by nuclear plants that resemble Calcium do not merely increase the risk of bone cancer or leukemia, but they weaken the immune defenses provided by the white cells of the blood that originate in the bone marrow. As a result the rate of cancer development all over the body normally held in check by white cells is increased, and the defenses against infectious diseases such as influenza, pneumonia and AIDS are lowered, increasing both total and infant mortality due to all causes combined as discussed in references (1)(2)(3) and (6).

21. Unfortunately for the protection of human health, the operators of nuclear plants such as Millstone are no longer required to measure Strontium-90 in the milk, the soil, the water and other

environmental samples, nor does the government measure bone concentrations of this element after 1982, and milk concentrations of this critical element each month in a series of cities across the nation since 1990. Thus, presently the operators of nuclear reactors only ^{need to} measure gamma ray emitting elements such as Cesium-137 that can be more easily and cheaply measured than Strontium-90 that emits only short range electrons that cannot penetrate the Geiger counters used for gamma rays, and which requires more costly laboratory procedures for each sample.

22. As recently brought out in the ECCR report (6), the reason why the risk of low protracted exposures due to inhaled or ingested radioactive chemicals is some 100 to 1000 times greater than the same dose due to short exposures is that for the low doses given over a long period the damage by free-radicals of oxygen dominate over direct damage to the DNA and cell membranes. This leads to a dose-response curve that rises extremely rapidly for very small doses and then flattens out at high doses, thus causing the error made by a linear extrapolation to zero dose used to establish the existing safety standards for permitted releases from nuclear plants.

23. Thus, the ECRR report states in paragraph 10 of its executive summary " that the present cancer epidemic is a consequence of exposure to global atmospheric weapons fallout in the period 1959-63 and that more recent releases of radioisotopes to the environment from the operation of the nuclear fuel cycle will result in significant increases in cancer and other types of ill health (Emphasis added).

24. Thus, in the concluding paragraph of the executive summary, it says that it is "the committee's belief that nuclear power is a costly way of producing energy when human health deficits are included in the overall assessment" and that "the environmental consequences of radioactive discharges must be assessed in relation to the total environment, including both direct and indirect effects on all living systems."(6).

25. Although the most serious airborne radioactive releases so far have occurred from the operation of Unit I which was a Boiling Water Reactor (BWR) permanently closed in 1996, studies described in references (1) and (2) have found similar increases in infant mortality, low birthweight and cancer around Pressurized Water Reactors (PWR) such as Shippingport near Pittsburgh and Indian Point near New York City. Therefore, it is to be expected that a twenty year renewal of the operating licenses for Millstone Units 1 and 2 would further increase the adverse effects on human health and their associated cost in health care, as well as the damage to wildlife, birds and fish that have been rising alarmingly in recent years.

26. This further increase of damage to human health and the environment is not only due to the short-lived radioactive elements such as Iodine-131, but also due to the long half-life of many of the radioactive chemicals routinely released by nuclear plants such as the 28 years it takes for the activity of Strontium-90 to decrease by half. Thus, it is very likely that continued operation of the Millstone Nuclear Plant will further increase the rates of cancer, low birthweight, infant mortality and chronic diseases such as hypothyroidism, diabetes, and other diseases related to immune and hormonal system damage as these elements accumulate in the underground water table from which wells draw their water, making it impossible to safely protect the public.

27. The unexpectedly great risk to the life and future health of the newborn due to very small doses of radiation to critical organs has just been further supported by a study of the incidence of premature births leading to underweight infants as reported in the April 28, 2004 issue of the Journal of the American Medical Association (7). This study revealed that the very small dose due to scattered radiation to the thyroid in the neck of the mother produced by just one or two dental X-rays during the first three months of pregnancy, approximately 40 millirem each, significantly increased the risk of premature birth and low birth weight. This in turn is known to increase infant mortality as well as producing a greater danger of mental and physical problems for infants who survive as a result of recent advances in neonatal care, but at huge emotional cost to the family and rising health care costs to society.

28. In the light of current knowledge of the unanticipated serious adverse effects on human health of extremely small doses of prolonged environmental radiation exposures to Strontium-90 and other fission products as described above, it is my professional opinion that the Millstone 2 and 3 reactors would need to end all radiation releases in order to meet public health requirements for safety, and that therefore they should not be granted license renewals to continue operations during the proposed twenty year renewal period without demonstrating that this objective can be achieved.

I hereby declare the foregoing to be true and accurate to the best of my knowledge, information and belief under penalty of perjury.

Ernest J. Sternglass
Ernest J. Sternglass

Dated: August 8, 2004

LIST OF REFERENCES

- 1) Ernest J. Sternglass, "Secret Fallout: Low-Level Radiation from Hiroshima to Three Mile Island" (McGraw - Hill, New York, 1981) Available on the website www.radiation.org.
- 2) Ernest J. Sternglass, "Environmental Radiation and Human Health", pp.145-216, Proceedings of the Sixth Berkeley Symposium on Mathematical Statistics and Probability: Effects of Pollution on Health", Edited by M. L. Lecam, J. Neyman El. Scott, University of California Press, Berkeley and Los Angeles, 1972.
- 3) Ernest J. Sternglass, "Cancer Mortality Changes Around Nuclear Facilities in Connecticut", pp. 174-212, "Radiation Standards and Human Health: Proceedings of a Congressional Seminar", February 10, 1978 published by the Environmental Policy Institute, Washington, DC.
- 4) . Joseph J. Mangano, "Risks of Cancer And Other Diseases From The Operation Of The Millstone Nuclear Plant," August 5, 2004, Radiation and Public Health Project, New York, NY.
- 5). Finestone vs. FLP, Case Number 03-140040-CIV-COHN/LYNCH
- 6) Philippe P. Huel et al. "Antepartum Dental Radiography and Infant Low Birth Weight", Journal of the American Medical Association, Volume 291, No.16, April 28, 2004, pp. 1987-1993.
- 7) ."Health Effects of Ionizing Radiation Exposure at Low Doses for Radiation Protection Purposes: Recommendations of the European Committee on Radiation Risk", Edited by Chris Busby with Rosalie Bertell, Inge Schmitz - Feuerhake, Molly Scott Cato and Alexei Yablokov, Published for the ECRR by Green Audit Press, Castle Cottage, Aberystwyth, SY 23iDZ, United Kingdom. (2003) Website: www.euradcom.org 2003.

6. For many years, I have collected data from governmental sources including the Connecticut Tumor Registry with regard to cancer incidence and other related issues with particular regard to the Millstone Nuclear Power Station.

7. Current findings of my research are summarized in a report entitled "Risks of Cancer and Other Diseases From the Operation of the Millstone Nuclear Plant," dated August 5, 2004, a copy of which is annexed hereto and incorporated herein by reference as Exhibit A.

8. It is my professional opinion, based upon my educational background, my review of governmental source material including filings with the U.S. Nuclear Regulatory Commission, my work with the Radiation and Public Health Project and my review of scientific papers and reports that the Millstone Nuclear Power Station operations are responsible for increasing the risk of cancer and related diseases in the surrounding community as well have having a causative connection to the phenomenon of higher incidences of cancer in the surrounding community.

9. Further, it is my professional opinion that the Millstone Nuclear Power Station operations present a present continuing threat to the health of the community.

10. Further, it is my professional opinion that as long as the Millstone Nuclear Power Station emits radioisotopes to the environment it will be a threat to the health of the community.

11. Further, it is my professional opinion the U.S. Nuclear Regulatory Commission need consider and apply the term "safety" to relicensing

FROM : -

FAX NO. :

Jun. 25 2003 01:40AM P3

FROM : NANCY BURTON ESO

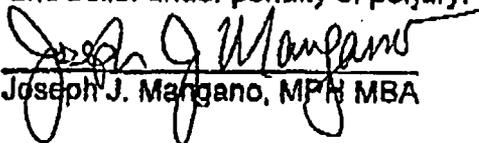
FAX NO. : 203 938 3169

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proceedings with regard to current knowledge of the health effects from prolonged exposure to low levels of ionizing radiation.

12. Finally, it is my professional opinion that as Millstone Units 2 and 3 age, the risk of adverse health effects including heightened cancer incidences to the community will increase because of economic incentives on the part of the owner and operator to generate electricity at close to capacity and defer maintenance until scheduled refueling outages.

I hereby declare that the facts and statements set forth hereinabove are true to the best of my knowledge, information and belief under penalty of perjury.


Joseph J. Mangano, MPH MBA

Dated: August 9, 2004

**RISKS OF CANCER AND OTHER DISEASES
FROM THE OPERATION OF THE MILLSTONE NUCLEAR PLANT**

Joseph J. Mangano, MPH MBA
National Coordinator
Radiation and Public Health Project
August 5, 2004

I am Joseph Mangano, National Coordinator of the Radiation and Public Health Project (RPHP), a non profit professional research organization based in New York City. I have served RPHP as a research associate from 1989-2000, and as National Coordinator ever since. My training includes a master's degree in public health from the University of North Carolina (1978) and a master's degree in business administration from Fordham University (1985). I have published 20 articles in professional medical journals on health risks of radiation, and am the author of Low-Level Radiation and Immune Damage: An Atomic Era Legacy (Lewis Publishers, 1998).

The information I am presenting here is taken from official government sources, which are documented. In addition, I am offering results from the study of radioactive Strontium-90 in baby teeth that RPHP has been conducting since 1998.

A summary of the findings on health risks from Millstone to the local population is as follows:

Risk of a Catastrophic Meltdown, and Health Consequences

- Millstone is among the oldest U.S. plants. Millstone Units 2 and 3 began operations in 1975 and 1986; the now-closed Millstone 1 operated from 1970 to 1995. No U.S. reactor has ever operated more than 35 years, raising concerns about aging parts potentially failing and causing a meltdown.
- Before 1995, Millstone 2/3 operated 66% of the time, well below the U.S. average of 75%. Closings frequently occurred due to mechanical problems. Since January 1, 2001, the Millstone average rose to 91%, again raising the issue of whether aging parts are being pushed past their safe limits and risking a catastrophic meltdown.
- The average time per reactor spent by federal regulators performing inspections fell 30% from 1996 to 2002.
- If the core of one of Millstone's two operating reactors were to experience a meltdown, it would cause at least 41,000 immediate deaths from and 48,000 immediate cases of acute radiation sickness, along with 71,000 eventual cancer deaths in the local area.

Radioactivity Routinely Produced

- Large amounts of highly radioactive waste have accumulated at Millstone, and any possibility of moving it permanently to Yucca Mountain, Nevada is at least seven years in the future, if ever.
- From 1970-93, Millstone emitted the 3rd greatest amounts of airborne radioactivity among the 72 operating U.S. plants. The total of about 32 curies is more than twice the amount emitted during the Three Mile Island accident, suggesting the local populations may be at an increased risk of cancer.

High and Rising Childhood and Adult Cancer Rates Near Millstone and Indian Point

- From the late 1960s to the late 1990s, the rate of cancer diagnosed in Connecticut children under age five rose 72%.
- In the period 1971-84 after the Millstone plant opened, cancer incidence and mortality age 0-19 in New London County rose 17% and 25% faster than the state rate.
- In these same 14 years, cancer incidence and mortality in New London county rose faster than the state for leukemia, female breast, thyroid, and bone/joint cancer, all of which are known to be sensitive to radiation. Excess breast cancer increases occurred for young, middle-aged, and elderly women.
- In the late 1990s, the highest rates of total cancers and breast cancer in New London County are in those towns closest to Millstone.

Improvements in Health After Millstone Shutdown

In the winter of 1995-96, revelations of shoddy safety practices prompted the shutdown of the Connecticut Yankee and all three Millstone reactors. Connecticut Yankee and Millstone 1 were closed permanently, and Millstone 2/3 reopened in the summers of 1999 and 1998, respectively. During the period that no reactor operated in Connecticut (1996-97), various improvements in local health were observed:

- Mortality in infants under 1 year rate fell 18.1% in the five Connecticut and Rhode Island counties downwind from the reactors, dropping from 136 to 105 deaths.
- The death rate in children age 1-9 fell 39.1%, dropping from 25 to 15 deaths.
- While Millstone 2 and 3 operated part of the time in 1998-99, these mortality levels remained low. But they rose in 2000-01, when the reactors returned to full power.

Tooth Study Results

Only 37 baby teeth have been collected from Connecticut, **which is too few to draw conclusions from.** However, preliminary results document several matters of concern:

1. Connecticut had an average Sr-90 level higher than each of the six other states that contributed at least 130 teeth; only Pennsylvania had an average equal to Connecticut.
2. From 1985-88 to 1993-96, average Sr-90 levels in Connecticut baby teeth more than doubled.
3. Average Sr-90 levels in 5 baby teeth from Connecticut children with cancer are nearly double that of teeth from children without cancer.

The above results suggest that current reactor emissions - not old fallout from Nevada bomb tests in the 1950s and 1960s - account for a substantial proportion of radioactivity in the bodies of local children.

THREATS POSED BY NUCLEAR REACTORS TO CONNECTICUT

Millstone Unit 1 in Waterford started up in 1970 and closed at the end of 1995). Millstone Units 2 and 3 began operations in 1975 and 1986, respectively. The oldest U.S. reactor is Oyster Creek in New Jersey, which started in 1969.

A. Types of Reactor Emissions Posing Health Threats

There are four types of public health risk posed by nuclear plants like Millstone:

1. Meltdown After Terrorist Attack.

Health concerns about nuclear reactors rose after September 11, 2001, especially those near large population centers. There has been a prolonged debate about the vulnerability of reactors to a terrorist strike, and the horrifying health consequences that would follow. In 1982, the Nuclear Regulatory Commission estimated the casualties after a reactor core meltdown. (1) The estimates for Millstone 2/3 were 41,000 rapid deaths from radiation poisoning, 48,000 rapid cases of radiation poisoning and 71,000 eventual cancer deaths.

These figures should be seen as conservative because they only consider

- a core meltdown, not one in the waste pools where the majority of radioactivity exists
- persons only living within 30 miles of the reactor
- 1980 population figures, which have risen since

Because Millstone is just 100 miles to the northeast of New York City, the most densely populated area in the U.S., and 75 miles southwest of Boston, particular concern should be raised about the threat of a terrorist attack against the plant.

2. Meltdown After Mechanical Failure.

A terrorist attack is not the only way in which a reactor meltdown can occur; mechanical failure is the other. The Chernobyl plant suffered a full meltdown of its core in 1986, while Three Mile Island Unit 2 in Pennsylvania experienced a partial meltdown in 1979, closing the reactor permanently. Both accidents were caused by mechanical failure, combined with human error.

Because Millstone 2/3 and many other reactors are aging, there is greater concern about parts being more likely to wear out, leak, or corrode. This concern was illustrated in March 2002 at the Davis-Besse plant near Toledo, OH.

Adding to the concerns of the mechanical failure is the recent tendency of plant operators to run aging reactors more of the time. From 1970-94, Millstone 2/3 operated just 66% of the time (U.S. average 75%). Reactors were often closed for routine inspections and to repair mechanical failures. Since January 1, 2001, this "capacity factor" leaped to 91% at Millstone. (2) **Aging parts being pushed to the maximum presents another risk of a malfunction and major meltdown.**

Regulatory responsibility for nuclear plant safety lies with the U.S. Nuclear Regulatory Commission (NRC). From 1996 to 2002, the average annual hours of NRC inspection

time per reactor tumbled 30%. (3) This is a troubling trend, especially given the advancing age of the reactors.

3. Waste Buildup.

Each nuclear plant accumulates highly radioactive waste, known as "spent fuel rods." These resemble 10-foot long steel rods about the diameter of a pencil, containing high levels of radioactivity, and must be placed in 40 foot deep pools of constantly-cooled water. Millstone is running out of pool space, and will soon need to begin transferring some of the older rods to "dry cask" storage, or thick concrete-and-steel containers stored above-ground on the site. The U.S. government is planning to eventually store all waste at Yucca Mountain Nevada, but this plan is being contested in the courts, and the earliest possible date that waste transfers would begin is 2010. Whether the waste remains on site, or is transferred to Nevada, a successful terrorist attack or mechanical failure could cause a large-scale meltdown.

4. Routine Emissions.

While most radioactivity produced in reactors is contained in the building and stored as waste, a small proportion of this mix of 100-plus carcinogenic chemicals escapes through the stacks of the reactor, or must be deliberately released during periodic refueling. These tiny particles and gases present a concern for public health, since it enters the human body by breathing or through the food chain, after precipitation brings it to reservoirs, dairies, and other sources of food and water.

The U.S. Nuclear Regulatory Commission issued comparative records on routine releases for all reactors until it ceased this publication in 1993. Prior to that time, **Millstone had the 3rd highest lifetime emissions of 72 operating U.S. plants.** Emissions totaled over 32 curies, or 32 trillion picocuries (a measure of radioactivity) released into the air; this includes only chemicals with a half-life of more than eight days, or those most likely to enter the human body. This figure is more than two times greater than the official tally of 14 trillion emitted into the air at Three Mile Island during the 1979 accident. (4)

HIGH AND RISING CANCER RATES IN CONNECTICUT

Evidence suggests that Millstone emissions may increase the risk of cancer in Connecticut residents living nearby.

A. Rising Childhood Cancer Incidence.

Children, especially fetuses and infants, are most susceptible to the damaging effects of radiation exposure. As a result, many medical journal articles have been published about childhood cancer rates near nuclear power plants. A number have found elevated rates among children near plants.

In Connecticut, rates of childhood cancer have been rising in recent decades. From 1967-69 (before Millstone 1 startup) until 1996-98, the statewide rate for children age 0-4 rose 72%, from 14.21 to 24.45 cases per 100,000 population. About 50 Connecticut children under age five receive a diagnosis of cancer each year. Even in the 1990s, when U.S. child cancer rates were generally steady, Connecticut rates continued to increase. Figure 1 illustrates this trend, and actual numbers are presented as Appendix 1 to this report.

B. Childhood Cancer Increases in New London County After Millstone Startup.

Excessively large increases in childhood cancer occurred in New London County, where Millstone is located. In 1990, the National Cancer Institute (NCI) published a large study of cancer rates near 62 U.S. nuclear plants before and after startup, including Millstone. (5)

The NCI study showed that after Millstone opened in 1970, cancer incidence rates for children age 0-19 in New London County rose 17% faster than the Connecticut rate (Table 1). Put another way, the county rate was 12% below the state before startup, and 4% above after startup. The rate of cancer deaths among children in the county rose 25% faster than the nation (Table 2), moving from 13% below to 9% above the U.S.

Table 1
Cancer Incidence, Age 0-19
New London County vs. Connecticut
Before and After Startup of Millstone Plant

Age	County Cases		% County is Above/Below CT		% Change
	Before	After	Before	After	
0-9	111	84	- 2%	+12%	+14%
10-19	62	88	-25%	- 4%	+29%
TOT 0-19	173	172	-12%	+ 4%	+17%

Before = 1950-70; After = 1971-84

Source: National Cancer Institute, Cancer in Populations Living Near Nuclear Facilities, 1990.

Table 2
 Cancer Mortality, Age 0-19
 New London County vs. U.S.
 Before and After Startup of Millstone Plant

<u>Age</u>	<u>County Deaths</u>		<u>% County is Above/Below US</u>		<u>% Change</u>
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>	
0-9	66	30	- 5%	+13%	+19%
10-19	32	33	-26%	+ 5%	+42%
TOT 0-19	98	63	-13%	+ 9%	+25%

Before = 1950-70; After = 1971-84

Source: National Cancer Institute, Cancer in Populations Living Near Nuclear Facilities, 1990.

A recent study showed that 14 of 14 areas near nuclear plants in the eastern U.S. had rates of childhood cancer age 0-9 above the U.S. rate during the 10-year period 1988-97, including Millstone. (6)

C. Radiosensitive Cancer Increases in New London County After Millstone Startup.

The New London cancer incidence rate also rose faster than the state rate in the first 14 years after Millstone startup for several types of cancer whose risk is known to be raised by radiation exposure. These include leukemia (rose +15% after the plant started up), female breast cancer (+6%), thyroid cancer (+14%), and bone and joint cancer (+26%). Persons of all ages are included in this comparison. The rate for all cancers combined rose 7% (Table 3).

The death rate for these cancers also rose more sharply in New London County than it did nationwide. The excess increases include leukemia (+9%), female breast cancer (+6%), thyroid cancer (+86%), and bone and joint cancer (+26%). The death rate for all cancers combined rose 6% (Table 4).

Table 3
Cancer Incidence, Persons of All Ages
Selected Radiosensitive Cancers
New London County vs. Connecticut
Before and After Startup of Millstone Plant

<u>Cancer</u>	<u>County Cases</u>		<u>% County is Above/Below CT</u>		<u>% Change</u>
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>	
Leukemia	309	344	-14%	- 1%	+15%
(F) Breast	1311	1556	-11%	- 6%	+ 6%
Thyroid	64	90	-31%	- 21%	+14%
Bone + Joint	31	32	-11%	+12%	+26%
All Cancer	10111	11331	- 8%	- 2%	+ 7%

Before = 1950-70; After = 1971-84. Difference of borderline significance for leukemia ($p < .07$) and breast cancer ($p < .07$). Difference statistically significant for all cancers combined ($p < .0001$).
Source: National Cancer Institute, Cancer in Populations Living Near Nuclear Facilities, 1990.

Table 4
Cancer Mortality, Persons of All Ages
Selected Radiosensitive Cancers
New London County vs. U.S.
Before and After Startup of Millstone Plant

<u>Cancer</u>	<u>County Deaths</u>		<u>% County is Above/Below US</u>		<u>% Change</u>
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>	
Leukemia	246	222	- 9%	- 1%	+ 9%
(F) Breast	561	552	+ 7%	+13%	+ 6%
Thyroid	16	19	- 27%	+36%	+86%
Bone + Joint	39	26	- 6%	+18%	+26%
All Cancer	6052	5992	+ 5%	+11%	+ 6%

Before = 1950-70; After = 1971-84. Difference of borderline significance for thyroid cancer ($p < .08$). Difference statistically significant for all cancers combined ($p < .003$).
Source: National Cancer Institute, Cancer in Populations Living Near Nuclear Facilities, 1990.

D. Breast Cancer Increases in New London County After Millstone Startup.

The NCI study also showed that New London County's excess increases in breast cancer incidence occurred in young women, middle-aged women, and elderly women. The excess county increases compared to the state include age 20-39 (rose +21% after the plant started up), age 40-59 (+7%), and age 60 and over (+4%), see Table 5.

Breast cancer mortality in the county (compared to the U.S.) declined for age 20-39 (-22%), but rose for age 40-59 (+12%) and 60 and up (+5%), see Table 6.

Table 5
 Female Breast Cancer Incidence, by Age at Diagnosis
 New London County vs. Connecticut
 Before and After Startup of Millstone Plant

<u>Age</u>	<u>County Cases</u>		<u>% County is Above/Below CT</u>		<u>% Change</u>
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>	
20-39	90	101	- 23%	- 7%	+21%
40-59	548	595	- 14%	- 8%	+ 7%
60+	673	860	- 8%	- 4%	+ 4%
All Ages	1311	1556	- 11%	- 6%	+ 6%

Before = 1950-70; After = 1971-84. Difference of borderline significance for all ages (p<.07).
 Source: National Cancer Institute, Cancer in Populations Living Near Nuclear Facilities, 1990.

Table 6
 Female Breast Cancer Mortality, by Age at Death
 New London County vs. U.S.
 Before and After Startup of Millstone Plant

<u>Cancer</u>	<u>County Deaths</u>		<u>% County is Above/Below US</u>		<u>% Change</u>
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>	
20-39	35	21	+28%	+ 0%	- 22%
40-59	185	175	- 11%	+ 2%	+12%
60+	341	356	+15%	+20%	+ 5%
All Ages	561	552	+ 7%	+13%	+ 6%

Before = 1950-70; After = 1971-84
 Source: National Cancer Institute, Cancer in Populations Living Near Nuclear Facilities, 1990.

E. Cancer Incidence in New London County Towns Closest to Reactors.

The Connecticut Tumor Registry has operated since 1935, the oldest of any state registry in the U.S. It has produced a variety of reports on cancer incidence, and some are now available on the state Department of Public Health's web site.

Some of these reports present cancer incidence for each town and city in the state. These data permit an analysis of cancer in towns closest to nuclear reactors to be made. Table 7 examines 1995-99 cancer incidence in the six New London County towns that lie closest to (under ten miles from) the Millstone reactor, compared to the remainder of the county. The six towns account for just under half of the county's residents.

Table 7 documents that the 1995-99 cancer incidence rate in the six towns (East Lyme, Groton, Lyme, New London, Old Lyme, and Waterford) was 2.0% above the state rate. The rate in other New London towns was 5.9% below the state rate. **If the rates were equal in the two portions of New London County, 238 fewer persons in the six towns would have been diagnosed with cancer in 1995-99.**

Table 7
Total Cancer Incidence, New London County vs. CT
By Area of the County, 1995-99

<u>Area of County</u>	<u>Cases, 1995-99</u>		<u>% Above/Below CT</u>
	<u>Actual</u>	<u>Expected*</u>	
Six Towns Nearest Millstone	3075	3014	+ 2.0%
Other New London County	3577	3800	- 5.9%

* Expected cases if local rate were equal to state rate. Difference significant (p<.002); excess cases = 238. Towns closest to Millstone include East Lyme, Groton, Lyme, New London, Old Lyme, and Waterford
Source: www.dph.state.ct.us

F. Breast Cancer Incidence in New London County Towns Closest to Reactors.

The Connecticut Tumor Registry report also shows that 1995-99 female breast cancer incidence for the six New London County towns closest to the Millstone reactor was equal to the state rate, while the rest of the county was 10.1% below the state. The excess number of breast cancer cases is 52 (Table 8).

Table 8
Female Breast Cancer Incidence
New London County vs. CT
By Area of the County, 1995-99

<u>Area of County</u>	<u>Cases, 1995-99</u>		<u>% Above/Below CT</u>
	<u>Actual</u>	<u>Expected*</u>	
Six Towns Nearest Millstone	510	510	+ 0.0%
Other New London County	484	538	- 10.1%

* Expected cases if local rate were equal to state rate. Excess cases = 52. Towns closest to Millstone include East Lyme, Groton, Lyme, New London, Old Lyme, and Waterford
Source: www.dph.state.ct.us

G. Improvements in Infant, Child Health During Reactor Closing.

During the winter of 1995-96, workers at the Millstone plant publicized numerous safety infractions at the plant. The story became widely reported, including a cover story in the March 7, 1996 *Time* magazine.

Northeast Utilities, which operated the Connecticut nuclear plants at the time, ceased power production the three Millstone reactors plus Connecticut Yankee. Millstone 1 and Connecticut Yankee were permanently closed. But before Millstone Units 2 and 3 were

restarted, the company invested over \$1 billion in needed plant and managerial upgrades. It also paid a \$2 million fine to the NRC, a record for any U.S. nuclear plant.

Millstone 3 restarted in July 1998, after 2 1/2 years of closure, while Millstone 2 began operations in June 1999, after 3 1/2 years of closure. Thus, the percent of time Millstone's operated was approximately 10% in 1996-97, about 50% in 1998-99, and about 90% in 2000-01. These four years with limited plant operations, and less opportunity for routine and accidental emissions were studied to detect any immediate changes in disease rates for local residents. Infants and young children were selected, since it is the youngest humans who are most susceptible to radiation's harmful effects.

Table 9 shows the change in infant mortality rates (deaths under one year) in the five counties located within 40 miles and downwind (north and east) of Millstone. These include New London, Tolland, and Windham Counties in Connecticut, plus Kent and Washington Counties in Rhode Island. In 1996-97, when there were virtually no nuclear operations at Millstone, the infant death rate fell by 18.1%, falling from 136 to 105 deaths. The U.S. decline in those years was only 6.8%. In 1998-99, as Millstone 2 and 3 began operating, the rate declined just 3.1%. But in 2000-01, when the two reactors returned to full power, the rate jumped 8.8% from the previous two years.

Table 9
 Infant Mortality (Death Rate Age 0-1)
 Counties <40 Miles and Downwind of Millstone
 1994-2001

<u>Period</u>	<u>Deaths <1 Yr</u>	<u>Live Births</u>	<u>Deaths per 1,000 Births</u>	<u>% Ch.</u>
1994-95 (80% operating factor)	136	18,361	7.41	-
1996-97 (10% operating factor)	105	17,292	6.07	-18.1%
1998-99 (50% operating factor)	100	17,010	5.88	- 3.1%
2000-01 (90% operating factor)	112	17,499	6.40	+ 8.8%

Sources: National Center for Health Statistics (available from <http://wonder.cdc.gov>, underlying cause of death). Bair FE. Weather of U.S. Cities, 4th Edition. Detroit: Gale Research Company Inc., 1992 (prevailing wind directions). Counties include New London CT, Tolland CT, Windham CT, Kent RI, Washington RI.

Deaths in young children also followed this pattern. In 1994-95, there were 25 children age 1-9 in the five counties who died from all causes except accidents, suicide, and homicide. This number dropped to 15 in the next two years, when the Connecticut nuclear plants were closed, a rate decline of 39.1%. Thereafter, as Millstone gradually restarted operations, the number of deaths rose again, to 20 and 25 in subsequent two-year periods.

STUDY OF RADIOACTIVE STRONTIUM-90 IN BABY TEETH

Since 1998, the Radiation and Public Health Project research group in New York has collected discarded baby teeth, and tested them for levels of radioactive Strontium-90, a chemical not found in nature, but only created in atomic bomb explosions and nuclear reactor operations. The group has tested over 4,000 teeth, mostly near seven U.S. reactors, and found that Sr-90 levels rose sharply (48.5%) from the late 1980s to the late 1990s. Moreover, average Sr-90 levels are generally 30 to 50% higher in the counties closest to nuclear reactors. Results have been published in four separate medical journals. (7)

A total of 37 Connecticut teeth have been tested with available results (as of May 1, 2004), using the new counter. Of these, 31 were from persons born after 1979, in whom most of the in-body Sr-90 was from current sources, not leftover fallout from Nevada bomb tests. Thus, these 31 teeth will be the focus of this analysis. **ALL OF THE FOLLOWING RESULTS MUST BE CONSIDERED PRELIMINARY**, until more teeth are tested and the significance of the results is improved.

The major findings include:

1. Highest Average Sr-90 of All States. Six states (other than Connecticut) contributed at least 130 teeth. Of these, Connecticut's average of 4.29 picocuries of Sr-90 per gram of calcium at birth, was equaled only by Pennsylvania as the highest of all states thus far.
2. Higher Sr-90 in Children with Cancer. Five (5) of the 31 teeth were donated from Connecticut children with cancer. The Sr-90 average for these five teeth was 7.03, compared to 3.76 from other teeth, or 87% higher/nearly double.
3. Rising Levels in the 1990s. Connecticut children born 1985-88 had a Sr-90 average of 1.85 (five teeth). Those born in the next four years had an average of 3.61 (13 teeth); and those born 1993-96 had an average of 4.32 (six teeth), a rise of 134%, (more than double) from the late 1980s to the mid-1990s.
4. Highest Levels Near Nuclear Plants. Those eight (8) tooth donors from Fairfield and New London Counties (near the Indian Point and Millstone plants) had an average Sr-90 concentration of 6.16, or 128% greater/more than double those from the other counties in Connecticut (2.70).

RPHP plans to collect and test more Connecticut teeth in the future.

APPENDIX 1
 CANCER INCIDENCE, AGE 0-4
 CONNECTICUT, 1967-1998

Year Dx	Cases	Population	Cases/100,000 Pop.		
			Annual	3 Yr.	3 Yr. Cases
1967	43	268344	16.02	15.15	124
1968	30	262708	11.42	14.42	116
1969	39	257014	15.17	14.21	112
1970	47	252187	18.64	15.03	116
1971	51	248355	20.54	18.08	137
1972	38	239964	15.84	18.37	136
1973	36	229954	15.66	17.40	125
1974	34	216746	15.69	15.73	108
1975	38	203959	18.63	16.60	108
1976	42	190358	22.06	18.66	114
1977	27	184367	14.64	18.49	107
1978	47	183430	25.62	20.78	116
1979	28	184561	15.17	18.47	102
1980	28	186933	14.98	18.56	103
1981	31	190795	16.25	15.47	87
1982	33	193516	17.05	16.11	92
1983	42	198071	21.20	18.20	106
1984	51	201496	25.31	21.24	126
1985	41	207209	19.79	22.08	134
1986	44	212960	20.66	21.88	136
1987	60	219354	27.35	22.67	145
1988	50	225536	22.17	23.41	154
1989	48	232465	20.65	23.33	158
1990	34	234142	14.52	19.07	132
1991	48	236945	20.26	18.48	130
1992	52	237137	21.93	18.92	134
1993	56	236362	23.69	21.96	156
1994	41	232542	17.63	21.10	149
1995	43	223223	19.26	20.23	140
1996	63	221449	28.45	21.71	147
1997	52	215576	24.12	23.93	158
1998	44	213177	20.64	24.45	159

REFERENCES:

1. Sandia National Laboratories. Consequences of a Reactor Accident (CRAC-2) Report. Published by Congress on November 1, 1982, and printed by the Washington Post that day. Also available at <http://www.geocities.com/mothersalert/crac.html>.
2. Nuclear Regulatory Commission and Nuclear Energy Institute. In The New York Times, October 2, 1995, p. B1 (1970-94 data). U.S. Nuclear Regulatory Commission, found at <http://www.nrc.gov> in April 2001 (1995-99 data).
3. U.S. Nuclear Regulatory Commission, in The Philadelphia Inquirer, March 28, 2004.
4. Tichler J, Doty K, Lucademo K. Radioactive Materials Released from Nuclear Power Plants, annual reports. Upton NY: Prepared by Brookhaven National Laboratory for the U.S. Nuclear Regulatory Commission. Pub. No. NUREG/CR-2907.
5. Jablon S, Hrubec, Z, Boice JD, Stone BJ. Cancer in Populations Living Near Nuclear Facilities. National Cancer Institute, NIH Pub. No. 90-874. Washington DC: U.S. Government Printing Office, 1990.
6. Mangano JJ et al. Elevated Childhood Cancer Incidence Proximate to U.S. Nuclear Power Plants. Archives of Environmental Health 2003;58(2):74-82.
7. Mangano JJ et al. An Unexpected Rise in Strontium-90 in US Deciduous Teeth in the 1990s. The Science of the Total Environment 2003;317:37-51.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of

:

DOMINION NUCLEAR CONNECTICUT, INC. :Docket Nos. 50-336-LR,
50-423-LR

(Millstone Nuclear Power Station,
Units 2 and 3)

:

:ASLBP No. 04-824-01-LR

AFFIDAVIT OF CYNTHIA M. BESADE

I, Cynthia M. Besade, do hereby declare as follows:

1. I am above the age of eighteen (18) years and I believe in the obligation of an oath.

2. From the age of three to age twenty (1963–1979), I resided with my family at 21 Fifth Avenue in Waterford, Connecticut, a location which is within two miles of the Millstone Nuclear Power Station.

3. My father, Joseph H. Besade, was employed at the Millstone Nuclear Power Station from 1973 until 1993 as a nuclear pipefitter.

4. In such capacity, my father was exposed at the Millstone Nuclear Power Plant workplace to ionizing radiation created as a byproduct of nuclear fission at the facility.

5. On or about May 2003, my father was diagnosed with cancer.

6. From May 2003 until August 2003, my father underwent treatment for his cancer.

7. Despite such treatment, my father's cancer spread rapidly and on August 16, 2003, my father succumbed to the disease.

8. My father's treating physician, who was affiliated with the New London

Cancer Center and the Lawrence & Memorial Hospital, told me in August 2003 that she believed that what my father had related to her as follows was correct:

- a. That my father's cancer was directly related to his workplace exposure at Millstone;
- b. That my father was exposed to high levels of radioactivity in certain areas of the facility; and
- c. That the protective clothing and lead blankets issued to workers, including my father, to prevent harm to their health from exposure to radiation were inadequate to the purpose.

9. I have been personally acquainted with many of my father's former co-workers at Millstone.

10. I am aware that seven (7) of his nuclear pipefitter co-workers succumbed to cancer before he became the eighth.

11. When I was growing up in Waterford, I recall promoters of the Millstone Nuclear Power Station providing assurances to the community that the facility would be safe and that it would provide cheap, clean and non-polluting electricity. Each of these representations has proved to be false.

12. I have been personally acquainted with many families living in the Waterford, East Lyme and Niantic and surrounding communities.

13. I have been personally acquainted with many individuals who have worked at Millstone and/or resided in the community surrounding Millstone who have died from cancer and cancer-related illnesses.

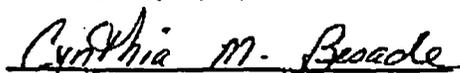
14. I have been personally acquainted with many individuals who have

worked at Millstone and/or resided in the community surrounding Millstone who have been diagnosed with cancer, have undergone treatment for cancer and presently survive.

15. I am also indirectly acquainted with individuals who have worked at Millstone and/or resided in the community surrounding Millstone who have died from cancer and cancer-related illnesses or who have undergone treatment for cancer and presently survive.

16. I attach hereto a list of the individuals referenced above in paragraphs 13, 14 and 15. (Other than my father, the names of all others are not being revealed here although their identities are retained by me).

I hereby swear that the information provided herein is true to the best of my knowledge, information and belief under penalty of perjury.


Cynthia M. Besade

Dated: August 9, 2004

Millstone Community Cancer Victims

Personally Known

1. Joseph H. Besade Fifth Ave. Waterford Millstone worker/community
Metastatic Lung Cancer Deceased/Aug. 16, 2003
Age 66
 2. Male Daniels Ave. Waterford community
Brain cancer Deceased/ 1980?
Age 50?
 3. Male Third Ave. Waterford Millstone worker/community
Brain cancer Deceased/year?
Age 35?
 4. Male / Fifth Ave. Waterford community
Age 65 diagnosed w/Lung cancer/ survivor2003 Fall Diagnosed w/ Brain
Cancer /survivor
 5. Male/Doctor practice was located on Main St. Niantic community/1970' &80's
Blood cancer/unknown type status unknown/ 1996?1997?
Age 70?
 6. Male Flanders Road/Rt. 161 Niantic community
Throat cancer Deceased/ June 22, 2003
Age 72
 7. Male Roxbury Road Niantic community/parent of #8.
Metastatic Liver cancer Deceased/ 1979?
Age 60?
 8. Male Roxbury Road Niantic 20 yr. Millstone worker/community
Brain tumor diagnosed 1986/29 years of age then. Survivor/disabled
Current age 48
- (Note: this begins the NU Unit 1 maintenance dept. (personnel who handled contaminated waste) where three people developed brain cancer within the same timeframe. NU abruptly closed this department and dismissed the employees in Jan. 1994) NU had them to sign off to not file suit against them (NU offered and paid \$ for sign off) to #8, 9, + 10
9. Male unknown address Millstone worker/community
Brain cancer Deceased / 1998?
Age between 30 and 40

10. Female Shennecossett Road Groton Millstone **worker/community**
Brain cancer/diagnosed 1985 Deceased/1997
11. Female Miss Vans Court Waterford Community
Leukemia Deceased/1995
Age 56
12. Male Tenth Ave. Waterford Community
Blood cancer/Type? Deceased/1976?
Age 18
13. Male Willets Ave. Waterford Community
Brain cancer Deceased/1982
Age 30?
14. Male Oswegatchie Hills Road Niantic Millstone **worker/community**
cancer? unknown type Deceased/2000
Age 70?
15. Male Niantic River Road Waterford community
Brain Cancer Deceased/1981
Age 45? Taught Science at Waterford High
16. Male Niles Hill Road Waterford Millstone **carpenter worker/community**
Lymphoma Survivor
Age 30 something @ diagnosis 1997?
17. Male Monroe Street Waterford community
Lymphoma Deceased/1986? 1987?
Age 50 something
18. Female Monroe Street Waterford community
Lymphoma Deceased/1986? 1987?
Age unknown #18's mother-in-law
19. Female/child Mullen Hill Road Waterford community/father was Millstone
worker
Bone cancer Leg amputated/1971 or so? Survivor
Age 11? (attended Southwest School)
- 20.. Male/teen unknown address/Sunset Dr. Waterford
Tumors in Spinal column Deceased /1985
Age 19 (attended Southwest School)
21. Male Tiffany Ave. Waterford community pancreatic/liver cancer? Not real

sure though Deceased /1987
Age 48?/50?

22. Female Lloyd Road Waterford community
Liver cancer Deceased /1980
Age 25?

23. Male Shore Road Waterford community
Liver cancer? Deceased /1977
Age 50 something? (Parent to #25)

24. Male Shore Road Waterford Millstone **carpenter worker**/community
Brain cancer (son of #24) Deceased / Jan. 1987
Age 31

25. Female (mother of # 24) Roselund Hill Uncasville community(summured on
Jordan Cove)w/24&25
Brain cancer Deceased/1986
Age 70?

26. Male child Fifth Ave Waterford community
leukemia Status unknown
Age of diagnosis 2 or 3 years

27. Female child Fifth Ave Waterford community
spinal tumors (attended Southwest School) Deceased / 1975?

28. Female Shore Road Waterford community
Breast Cancer/Double mastectomy Survivor
Age: 25?

29. Female 15 Lamphere Road Waterford community
Leukemia Deceased / 1979? 1980?
Age 18?

30. Male/ Vauxhall Steet ext. Waterford community
Lung cancer/deceased/2000
Age 65?

31. Female/ unknown location Wtfd./NL community
Breast cancer/ relative of above #33
Deceased/ 2001
Age unknown ? 60

32. Female/ Niantic community
Breast cancer/ Deceased/ 2000? Or 1999?

Age 70?

33. Male/ Great Neck Road, Waterford community/ nursery farmer
Cancer origin unknown? Deceased July 2004
Age 71
34. Male/ George Street Waterford/ then Spithead Road where he died this spring
2004/ Seaside Regional DMR/Director of Camp Harkness
Age 54
35. Female/ Spithead Road Waterford community Age 65? Breast cancer /
survivor
- 36.
37. Male/ husband of # 35 Age 65? (Both relocated to Florida, both were
recently diagnosed) Lymphoma
37. Female/ The Strand, Waterford community
Breast cancer/ 1970's or early 80's survivor (another relocated to Florida)
38. Female/ a street off Oswegatchie Road, Waterford community
Age 40? Breast Cancer/ Deceased 1985 or so?
39. Female/ Niantic River Road Waterford community/ worked in downtown
Niantic
Age 50? Breast Cancer Deceased/1998?
40. Female/teen 17 at onset Rope Ferry Road, Waterford community/student
Bone cancer/ leg amputated 1979? Survivor
41. Male/ Logger Hill/Rope Ferry Road Waterford/ then Niantic community
Age 60? Lung Cancer / Deceased 2000
42. Male/ Quaker Hill Waterford
Lung Cancer/ Age 58? Deceased 1990?
- 43.. Male/ Clark Lane Waterford community
Age 45...diagnosed w/leukemia age 30 something survivor
- 44.. Male/Clark Lane Waterford community
Age unknown maybe 50 something.....**Father to # 45.** Deceased /
late 1980's/early 90's Cancer type unknown
- 45.. Female/ Dainels Avenue Waterford community (same family as listed in
40.)
Breast Cancer/ Deceased 2003

46.. Female/ Niantic River Road Waterford community
Cancer type can't remember.....Deceased 1980's **Mother in law to the #**
49

47. Female/ Niantic River Road (NOT THE SAME HOUSE BUT THE SAME
FAMILY)
Breast Cancer real aggressive type inflammatory 1990 survivor
Age 35?

48. Female/ Gallup Lane Waterford community
Breast cancer 1975 Deceased same yr.
Age 35?

49.. Female/ Oswegatchie Waterford community
Breast cancer 1974 1975? Deceased same yr.
Age 35?

50. Female Gay Hill Road Uncasville community
pancreatic cancer Deceased/ 1982?
Age 60?

51. Female (mother of # 24) Roselund Hill Uncasville community
Brain cancer Deceased/1986
Age 70?

Indirectly Acquainted

52. Female Seabreeze Drive, Waterford
Breast Cancer, Deceased 2003 Age 83

53. Male, Seabreeze Drive, Waterford
Colon Cancer, Deceased 2001

54. Male, Seabreeze Drive, Waterford
Liver cancer Deceased 2003

55. Female, Seabreeze Drive, Waterford
Breast Cancer 2000 survivor

56. Female Crescent Beach, East Lyme
Age 10 at exposure, now 26 Thyroid Cancer survivor

57. Female Niantic
Thyroid Cancer 2000 (?)

58. Female Niantic
Breast Cancer 2000 (?)

58. Female Groton Long Point
Breast cancer 1999 survivor

59. Female Shore Road, Waterford
Cancer of unknown origin survivor

60. Female Waterford
Ovarian cancer, high school sophomore, survivor

61. Female Mystic
Breast cancer, 50s, survivor

62. Female Mystic
Age 3 Cancer of unknown type

63. Male Niantic
Brain cancer 2000 (?)

64. Female Niantic
Brain cancer 1996(?)

65. Male Waterford
School age, childhood leukemia 2003

66. Niantic – Cluster of cancer cases on Bluff during 1990s

67. Female Black Point, Niantic
Cancer of unknown type 2003(?)

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of :
DOMINION NUCLEAR CONNECTICUT, INC. :Docket Nos. 50-336-LR,
50-423-LR
(Millstone Nuclear Power Station, :
Units 2 and 3) : ASLBP No. 04-824-01-LR

AFFIDAVIT OF MICHAEL N. STEINBERG

I, Michael Steinberg do hereby declare as follows:

1. I am above the age of eighteen (18) years and I believe in the obligation of an oath.
2. From 1961 until 1975, my sister, Lisa Steinberg, resided with my parents, Louis and Margaret Steinberg, at 9 Surrey Lane in Niantic, Connecticut.
3. Our former home at 9 Surrey Lane is located within three miles downwind of the Millstone Nuclear Power Station.
4. On or about 1990, my sister was diagnosed with thyroid cancer.
5. My sister underwent treatment for her cancer, including surgical removal of her thyroid gland.
6. My sister endured great pain and suffering during her struggle with cancer.
7. Because of the surgical removal of her thyroid gland, my sister has to take medication every day to perform the functions formerly performed by her thyroid gland, and must be checked regularly for cancer.

9. I am personally aware of six cancer cases in the east downtown Niantic, Connecticut neighborhood, as follows:

- a. Lung cancer: 2 (fatal)
- b. Liver cancer: 1 (fatal)
- c. Leukemia: 1 (fatal)
- d. Bone cancer 1 (fatal)
- e. Pancreatic cancer 1 (non-fatal)

I hereby declare that the foregoing facts are true to the best of my knowledge, information and belief, under penalty of perjury.

Michael N. Steinberg

Dated: August 7, 2002

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of

:

DOMINION NUCLEAR CONNECTICUT, INC. :Docket Nos. 50-336-LR,
50-423-LR

(Millstone Nuclear Power Station,
Units 2 and 3)

:

:ASLBP No. 04-824-01-LR

AFFIDAVIT OF MILTON C. BURTON

I, Milton C. Burton, do hereby declare as follows:

1. I am above the age of eighteen (18) years and I believe in the obligation of an oath.

2. I resided from approximately 1988 until 2003 with my wife, June K. Burton, at 32 Seabreeze Drive in Waterford, Connecticut.

3. 32 Seabreeze Drive is located two miles downwind of the Millstone Nuclear Power Station.

4. While we resided at 32 Seabreeze Drive, my wife spent a great deal of time out-of-doors, particularly tending to her gardens and flowers.

5. My wife was expose to effluent paths of radioactive effluent emissions emanating from the Millstone Nuclear Power Station while she resided at 32 Seabreeze Drive.

6. In 2002, my wife was diagnosed with a rare form of breast cancer.

7. Thereafter, my wife endured extensive cancer therapy.

8. While my wife was hospitalized, our family was told by a member of the hospital staff that upon her personal knowledge the management of the Millstone Nuclear Power Station is aware of a heightened cancer incidence in the

community surrounding Millstone and is aware of the cause-and-effect connection between Millstone radioactive effluent emissions and cancer incidences.

9. Our family has recently spoken to my wife's treating physician about our concerns that the Millstone Nuclear Power Station radioactive effluent emissions are responsible in part for the heightened incidence of cancers and related diseases in the community surrounding Millstone and the treating physician stated that she agreed with such assessment.

10. On March 22, 2003, my wife succumbed to breast cancer.

I declare that the above facts and statements are true to the best of my knowledge, information and belief under penalty of perjury.


Milton C. Burton

Dated: August 9, 2004

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of

:

**DOMINION NUCLEAR CONNECTICUT, INC. :Docket Nos. 50-336-LR,
50-423-LR**

**(Millstone Nuclear Power Station,
Units 2 and 3)**

:

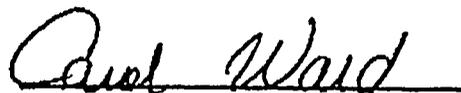
:ASLBP No. 04-824-01-LR

AFFIDAVIT OF CAROL WARD

I, Carol Ward, do hereby declare as follows:

1. I am above the age of eighteen (18) years and I believe in the obligation of an oath.
2. From 1976 until 2001, I resided with my husband, Edward J. Ward, at 34 Seabreeze Drive in Waterford, Connecticut.
3. In 1993, my husband was diagnosed with colon cancer.
4. My husband underwent extensive radiation and chemotherapy.
5. On April 10, 2001, my husband succumbed to the disease.
6. The Seabreeze Drive neighborhood where we resided in Waterford is located approximately two miles downwind from the Millstone Nuclear Power Station.
7. Our next-door neighbor died of breast cancer in 2003.
8. Our neighbor across the street died of liver cancer in 2003.
9. A nearby neighbor died of ovarian cancer in 2001.
10. Other neighbors have recently been diagnosed with lymphoma, breast cancer and childhood leukemia.

I hereby declare the foregoing statements are true to the best of my knowledge, information and belief, under penalty of perjury.


Carol Ward

Dated: August 9, 2004

Bureau of Water Management
 Permitting, Enforcement & Remediation Division
 Office of the Director, Michael J. Harder
 Telephone 424-3705 Intercom 2173
 Fax 424-4057

TRANSMITTAL SLIP

Date: 12/20/99

PROGRAM: PEAD

Please forward to:

Arthur J. Rocque, Jr. Jane K. Stahl

Robert L. Smith _____

For: Signature Approval

SUBJECT: Mills tone Unit 3
 Name of Person, Company, Corporation

- Consent Order
- Civil Referral
- Permit
- Log Letter
- Order
- Criminal Referral
- Correspondence
- Renewal of
Exec. Auth

Date of Review	Reviewer	Sign-Off Signature
	Staff	
12/20/99	Staff	<i>[Signature]</i>
12-20-99	Supervisor	<i>[Signature]</i>
	Legal Review	
12-28-99	Assistant Director	<i>[Signature]</i>
	Director	
	Bureau Chief	
12/28	Assistant Commissioner	<i>[Signature]</i>

RETURN TO C. Baker

Comments: Continuation of previously authorized activities

Due 2319

Commissioner Log #: _____

I CERTIFY THAT THIS DOCUMENT IS A TRUE COPY OF THE ORIGINAL.

Coral Yague
 NAME

Engineer Aide 2
 TITLE

DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF WATER MANAGEMENT

I really hate these. Statutes are very limited in what they define as "emergency". Continuing emergency is not even contemplated.

PLAINTIFF'S EXHIBIT
 X07 CV-0110122 SEP 7-1999
 NO. 570

Bonnie Lee Nugent

Court Qualified Question Document Examiner

Handwriting Expert

*Forgery Detection - Graffiti Investigation
Suicide Note Examination
Anonymous Letters - Threatening Letters
Workshops & Seminars*

Questioned Document Opinion

Date: July 3, 2003

Case Identification: Arthur J. Rocque, Jr.

Case Submitted by: Nancy Burton

147 Cross Highway

Redding Ridge, CT 06876

Submitted Date: June 28, 2003

Objective: Identify writer of four lines of printscript in lower left of Transmittal Slip dated 12/20/99.

"Questioned" Document: Department of Environmental Protection Transmittal Slip dated 12/20/99.

"Known" Documents: (1) State of Connecticut Dept. of Environmental Protection, Emergency Authorization, signed by Arthur J. Rocque, Jr., dated October 23, 1998, (2) Emergency Authorization Modification, dated January 8, 1999, (3) Two Emergency Authorization Renewals, dated December 28, 1999, and (4) May 12, 2000.

OPINION: My examination finds extreme similarities in slant, proportion, spacing, stroke structure, connections and skill, therefore it is my opinion that the hand that wrote the "Known" documents also wrote the "Questioned" document.

Bonnie Lee Nugent

Bonnie Lee Nugent

Document Examiner



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



EMERGENCY AUTHORIZATION

I. Pursuant to Connecticut General Statutes (C.G.S.) 22a-6k, an Emergency Authorization is hereby issued to:

Northeast Nuclear Energy Company (NNECO)
Post Office Box 128
Waterford, CT 06385-0128

to initiate, create, originate or maintain a discharge to the waters of the state (Long Island Sound) at:

Niantic Bay via Discharges Permitted Under NPDES Permit No. CT0003263, and
Other Locations Authorized Herein Associated with Cooling Water Intakes, Fire Protection Systems and
Plant Maintenance Systems at
Millstone Nuclear Power Station Units 1, 2 and 3
Rope Ferry Road
Waterford, CT 06385-0128

II. This Emergency Authorization ("Authorization") specifically allows NNECO to:

- (1) Discharge Unit 2 and 3 chlorinated and non-chlorinated pump lubrication water and pump leak off water to existing cooling water intake structures and existing discharge locations;
(2) Discharge Unit 2 and 3 service water and circulating water strainer backwash wastewater and screenwash wastewater;
(3) Increase the total maximum daily flow for Millstone Unit 3 from 1,313,200,000 gallons per day (gpd) to 1,410,600,000 gpd (as specified in Table 1 on page 6 of correspondence D12024 referenced in section V. of this Authorization) dated February 6, 1998 to David Cherico from F.C. Rothen;
(4) Discharge incidental concentrations of ethanolamine (ETA) resulting from the previously authorized additions of ETA to Unit 3 feedwater and condensate systems. These incidental discharges (as described in Letter D12418) of ETA shall be authorized to DSN 001C via DSNs 001C-2, 001C-3, 001C-4, 001C-6(b), and 001C-9 of NPDES Permit CT0003263, issued December 14, 1992;
(5) In the event of automatic plant shutdown, or other emergency situation, discharge condenser hotwell wastewater on a continuous basis via DSN 001C-8 of NPDES Permit CT0003263. NNECO shall notify the Commissioner, in writing, within 24 hours after such discharge commences;
(6) Discharge incidental non-radioactive wastewaters from numerous intermittent sources from Units 2 and 3 (as described in Letter D12938) to DSN 006 of NPDES Permit CT0003263, issued December 14, 1992;
(7) Discharge incidental concentrations of ethanolamine (ETA) and hydrazine resulting from the previously authorized additions of ETA and hydrazine within secondary units at Units 2 and 3. These incidental discharges (as described in Letter D12938) of ETA and hydrazine shall be authorized to DSN 006 of NPDES Permit CT0003263;
(8) In the event of automatic plant shutdown, or other emergency situation, discharge Unit 3

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X04-CU-01-0182840
7-19-01
NO. K

condensate surge tank wastewater to DSN 006 of NPDES Permit CT0003263. NNECO shall notify the Commissioner, in writing, within 24 hours after such discharge commences;

- (9) Discharge wastewater treated for hydrazine removal through air sparging and/or hydrogen peroxide addition from the Unit 2 Condensate Polishing Unit (DSN 001B-6). Such wastewaters may also contain residual concentrations of ammonia, hydrogen peroxide and ETA;
- (10) Discharge wastewater containing hydrazine resulting from previously authorized additions of hydrazine to Unit 2 feedwater systems via DSN 001B-1 during start-up, hot stand-by and shutdown conditions;
- (11) Discharge Unit 1 service water strainer backwash to DSN 002 of NPDES Permit number CT0003263;
- (12) Discharge chlorinated and non-chlorinated intake pump seal water from Unit 1 service water, circulating water, and screenwash pumps to the existing cooling water intake structure and existing discharge locations;
- (13) Discharge fire water system wastewaters (as documented in Letter D1329), including:
 - (a) Fire pump (P-82) gland run off water to DSN 009 of CT0003263 or to the ground;
 - (b) Pressure relief valve discharge from fire pump (M7-8) to a trap rock dispersion area;
 - (c) Fire pump (M7-8) gland run off to DSN 009 of CT0003263;
 - (d) Diesel powered fire pump (M7-7) cooling water and relief valve discharges to DSN 009 of CT0003263;
 - (e) Fire pump (M7-7) gland run off water to pump house floor drains;
- (14) Redirect the discharge of Unit 1 and Unit 2 chemistry laboratory wastewaters (as documented in Letter D15453) from DSN 001A-2 to DSN 001B-2.
- (15) Increase the maximum daily flow from DSN 001B of NPDES Permit No. CT0003263 to 844,550,000 gallons per day;
- (16) Increase the maximum daily flow from DSN 001B-5 of NPDES Permit No. CT0003263 to 51,840,000 gallons per day;
- (17) Convert the primary source of Unit 2 circulating water pump lubrication water from chlorinated domestic water to plant service water. Chlorinated domestic water may remain available to use as a backup source of water supply;
- (18) Discharge incidental concentrations of ethanolamine (ETA) and hydrazine from Units 1 and 2 resulting from the previously authorized additions of ETA and hydrazine within secondary units at Units 2 and 3. These incidental discharges (as described in Letter D15084) of ETA and hydrazine shall be authorized to DSN 001 of NPDES Permit CT0003263.

III. This Emergency Authorization shall become effective on the date it is issued, and shall expire upon a final determination on NNECO's application for reissuance of NPDES Permit No. CT0003263 or upon the Commissioner's determination that the requirements of Section 22a-6k of the Connecticut General Statutes are no longer applicable to the activities authorized herein, whichever is sooner. NNECO shall update the



**STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION**



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- (5) In the event of automatic plant shutdown, or other emergency situation, discharge condenser hotwell wastewater on a continuous basis via DSN 001C-8 of NPDES Permit CT0003263. NNECO shall notify the Commissioner, in writing, within 24 hours after such discharge commences;
- (6) Discharge incidental non-radioactive wastewaters from numerous intermittent sources from Units 2 and 3 (as described in Letter D12938) to DSN 006 of NPDES Permit CT0003263, issued December 14, 1992;
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- (8) In the event of automatic plant shutdown, or other emergency situation, discharge Unit 3

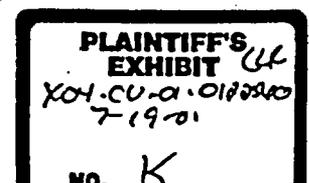
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condensate surge tank wastewater to DSN 006 of NPDES Permit CT0003263. NNECO shall notify the Commissioner, in writing, within 24 hours after such discharge commences;

- (9) Discharge wastewater treated for hydrazine removal through air sparging and/or hydrogen peroxide addition from the Unit 2 Condensate Polishing Unit (DSN 001B-6). Such wastewaters may also contain residual concentrations of ammonia, hydrogen peroxide and ETA;
- (10) Discharge wastewater containing hydrazine resulting from previously authorized additions of hydrazine to Unit 2 feedwater systems via DSN 001B-1 during start-up, hot stand-by and shutdown conditions;
- (11) Discharge Unit 1 service water strainer backwash to DSN 002 of NPDES Permit number CT0003263;
- (12) Discharge chlorinated and non-chlorinated intake pump seal water from Unit 1 service water, circulating water, and screenwash pumps to the existing cooling water intake structure and existing discharge locations;
- (13) Discharge fire water system wastewaters (as documented in Letter D1329), including:
 - (a) Fire pump (P-82) gland run off water to DSN 009 of CT0003263 or to the ground;
 - (b) Pressure relief valve discharge from fire pump (M7-8) to a trap rock dispersion area;
 - (c) Fire pump (M7-8) gland run off to DSN 009 of CT0003263;
 - (d) Diesel powered fire pump (M7-7) cooling water and relief valve discharges to DSN 009 of CT0003263;
 - (e) Fire pump (M7-7) gland run off water to pump house floor drains;
- (14) Redirect the discharge of Unit 1 and Unit 2 chemistry laboratory wastewaters (as documented in Letter D15453) from DSN 001A-2 to DSN 001B-2.
- (15) Increase the maximum daily flow from DSN 001B of NPDES Permit No. CT0003263 to 844,550,000 gallons per day;
- (16) Increase the maximum daily flow from DSN 001B-5 of NPDES Permit No. CT0003263 to 51,840,000 gallons per day;
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III. This Emergency Authorization shall become effective on the date it is issued, and shall expire upon a final determination on NNECO's application for reissuance of NPDES Permit No. CT0003263 or upon the Commissioner's determination that the requirements of Section 22a-6k of the Connecticut General Statutes are no longer applicable to the activities authorized herein, whichever is sooner. NNECO shall update the

documented need for this Emergency Authorization as requested. Upon issuance of this Authorization, Emergency Authorizations EA0100128S issued on December 28, 1999, EA0100133RS issued on May 12, 2000, EA0100142R issued on October 29, 1999 and EA0100143R issued on October 3, 1999 shall expire and no longer be in effect.

IV. The fee of \$500.00 has been submitted for issuance of this Authorization.

V. This Authorization has been issued based on information contained in various submittals, including but not limited to the following:

1. Letter D11848 from D. Amerine to J. Grier received December 22, 1997;
2. Letter D00362 from S. Scace to J. Grier dated August 11, 1997;
3. Letter D11528 from S. Scace to M. Harder dated September 24, 1997;
4. Letter from M. Harder to S. Scace dated October 1, 1997;
5. Letter D11681 from D.B. Amerine to M. Harder Dated November 5, 1997;
6. Letter D12024 from F.C. Rothen to David Cherico dated February 6, 1998;
7. Letter dated August 13, 1997 from M. Harder to S. Scace;
8. Letter D10304, dated October 4, 1996 from S. Scace to M. DiNoia;
9. Letter D12418 request for Emergency Authorization Millstone Unit 3 from Dennis Welch to James Grier received April 29, 1998.
10. Numerous correspondences from Northeast Nuclear Energy Company to DEP as referenced in Letter (D13038) from Paul M. Jacobson to James Grier dated September 1, 1998 and all documents referenced therein;
11. Correspondence D13275 dated September 15, 1998 from P. Jacobson to M. Harder and all documents referenced therein;
12. Correspondences D13239 and D13164 from Paul M. Jacobson to James Grier dated September 22, 1998 and August 26, 1998 respectively, and all documents referenced therein;
13. Correspondence D15453 from Paul Jacobson to James Grier dated February 3, 2000 and all documents referenced therein.
14. Millstone Nuclear Power Station Technical Specification Manuals for Units 1, 2, and 3.
15. Correspondence D16432 dated October 2, 2000 from Paul M. Jacobson to James Grier and all documents referenced therein.

VI. 1. DEFINITIONS

The definitions of terms used in this Authorization shall be the same as the definitions contained in C.G.S. section 22a-423, and section 22a-430-3(a) of the Regulations of Connecticut State Agencies.

Any person who, or municipality which initiates, creates, originates, or maintains a discharge for which an authorization is issued must comply with that authorization. If the source or activity generating the discharge for which an authorization is issued is owned by one person or municipality but is leased or in some other way the legal responsibility of another person or municipality (the discharger), the discharger is responsible for compliance with any authorization issued by the Commissioner.

VII. EFFLUENT LIMITATIONS & SPECIAL CONDITIONS:

(1) The following discharge limits shall not be exceeded at any time:

- (a) The flow of the Units 2 and 3 service water strainer backwashes shall not exceed 2600 gallons per minute.
- (b) The discharge of Units 2 and 3 pump lubrication and leak off wastewater shall be maintained only when such discharges are necessary for plant operation.
- (c) The pH of the Units 2 and 3 service water strainer backwash discharges shall not be less than 6.0 or greater than 9.0 standard units at any time.

(2) The following special conditions shall be complied with at all times:

- (a) The Units 2 and 3 service water strainer backwash discharges shall not exceed the limitations specified in section VII. (1) above of this Authorization. The treatment system(s) shall be maintained as necessary to ensure that all limitations are met.
- (b) Best management practices shall be implemented to ensure that no litter, debris, building materials or similar materials are discharged to the waters of the state.
- (c) Operational practices as outlined on page four, section 3) A. 1 and 2 of the December 22, 1997 correspondence D11848 from Northeast Utilities to James Grier (Ref: Attachment 1) shall be implemented at all times.
- (d) The management practices referenced as a) through d) on pages 3 and 4 of Letter D12418 (Ref: Attachment 2) shall be followed during all periods of discharge.
- (e) The management practices referenced as e) on page 4 of Letter D12418 (Ref: Attachment 2) shall be followed upon commencement of discharge at DSN 001C-9.
- (f) No discharge shall cause a violation of any condition or effluent limit as set forth in NPDES Permit CT0003263, except as authorized herein.
- (g) The total mass of ETA discharged from Millstone Unit 3 during any day shall not exceed 686 kilograms.
- (h) During discharge of 001C-8 pursuant to section II.(5) of this Authorization, the maximum daily flow of 001C-8 may exceed 100,000 gallons per day provided the total daily flow from Millstone Unit 3 during that day does not exceed 1,410,600,000 gallons.
- (i) Units 2 and 3 service water chlorine injection points may be used as specified in submittals from NNECO referenced herein. At all times chlorine injection shall be regulated to maintain the minimum

concentration needed to inhibit or eliminate biological activity.

- (j) The concentration of hydrazine at DSN 006 shall not exceed either 50 ppb monthly average or 300 ppb daily maximum.
- (k) During periods when auxiliary feedwater is used in the Unit 2 steam generators, the total daily combined mass of hydrazine discharged via DSN 001B-1 and DSN 001B-1(a) shall not exceed 33.12 kg/day at a hydrazine concentration of no more than 125 ppm.
- (l) With respect to hydrazine treatment at DSN.001B-6 (Unit 2 Condensate Polishing Facility), treatment practices as set forth in section 2 (pages 4-6) of correspondence (D13038) from NNECO to J. Grier dated September 1, 1998 (Ref: Attachment 3) shall be implemented.
- (m) During all periods of discharge, measures to mitigate the impact of ETA on the receiving water shall be implemented as specified in Letter D12418 referenced in section V. (9) of this Authorization.

VIII. MONITORING REQUIREMENTS:

- (a) Unless otherwise specified in this Authorization, all samples collected to verify compliance with the limits in this Authorization shall be grab samples. All samples shall be collected at points specified in this Authorization
- (b) On a semi-annual basis (June and December) sampling for chlorine (free, and total residual) shall be conducted between the trash racks and traveling screens at Units 2 and 3. These samples shall be collected from the intake bays of active circulation pumps.
- (c) On a semi-annual basis (June and December) sampling for chlorine (free, and total residual) shall be conducted at Units 1, 2 and 3 for discharges from:
 - (1) The circulating water pump lubrication strainer backwash or source water for the circulating water pump lubrication strainer for Units 2 and 3.
 - (2) The service water strainer backwash for Units 1, 2 and 3.
 - (3) Flow estimates and field pH measurements of these discharges shall be recorded during every sampling event.
- (d) On a monthly basis daily composite sampling for ethanolamine (ETA) and hydrazine shall be conducted at the DSN 006 sampling station; flow monitoring and the range of pH measurements shall be recorded for each sampling event.
- (e) During periods when auxiliary feedwater is used in the Unit 2 steam generators, weekly grab sampling for hydrazine shall be conducted at DSN001B-1; total daily flow and pH measurements shall be recorded during each sampling event.
- (f) On a quarterly basis (March, June, September and December) sampling for ETA shall be conducted at DSNs 001C-2, 001C-3, 001C-4, 001-6(b), and 001C-9 of NPDES Permit No. CT0003263.
- (g) In the event of an emergency condenser hotwell discharge as authorized in section II.(5) of this Authorization, DSN 001C-8 shall be monitored weekly for ETA and all associated pollutant parameters required pursuant to NPDES Permit No. CT0003263.
- (h) On a quarterly basis (March, June, September and December) submit a summary of activities relative to the discharge of fire water system discharges as authorized in section II. (13) of this Authorization.

- (i) On a quarterly basis (March, June, September, and December) sampling for ETA and hydrazine shall be conducted at DSNs 001A-2, 001B-2, and 001B-3. Estimated total daily flow shall be recorded for every sampling event.
- (j) On a weekly basis sampling for hydrazine, ammonia nitrogen, and, when used, hydrogen peroxide shall be conducted at the Unit 2 Condensate Polishing Facility (DSN 001B-6). Estimated total daily flow, estimated instantaneous flow, and estimated number of discharge hours per day shall be recorded for each sampling event.
- (k) All sample analyses which are required by this Authorization shall be performed using methods approved in accordance with 40CFR Part 136 or as approved in writing by the Commissioner, or as pending before the Commissioner in correspondence D10304 dated October 4, 1996.

IX. REPORTING REQUIREMENTS:

- (a) Unless otherwise stated in this Authorization, NNECO shall submit the results of all monitoring as required in section VIII. of this Authorization on a quarterly basis, no later than 30 days following the last month of each quarter (March, June, September, and December). A monthly summary of any violations of any of the limitations, terms or conditions of this Authorization, cause of any violation(s), and corrective action(s) undertaken and/or planned shall be submitted within 30 days of the beginning of the following month. NNECO shall comply with all reporting and notification requirements as specified in Sections 22a-430-3 and 4 of the Regulations of Connecticut State Agencies and as required in this Authorization. All monitoring reports and notifications specified herein shall be submitted to DEP at the address noted in section IX. (c) of this Authorization.
- (b) All reports shall be submitted in a reporting format prescribed by the Commissioner, as attached to this Authorization, or as later revised by the Commissioner.
- (c) If a violation of any of the discharge limits specified in this Authorization occurs, the Commissioner shall be notified within 2 hours of becoming aware of the circumstances, or the next business day if NNECO becomes aware of such circumstances outside of normal business hours. Written notification must be submitted to the DEP within 48 hours at the following address:

Mr. James Grier
 Department of Environmental Protection
 Water Management Bureau
 Bureau of Water Management
 79 Elm Street
 Hartford, CT 06106-5127.

- (d) NNECO shall notify the DEP in writing of the date of final discontinuance of any discharge authorized herein.

X. OTHER REQUIREMENTS:

- a) NNECO shall comply with all applicable Regulations of Connecticut State Agencies, including, without limitation,

Section 22a-430-3
 Subsection (b) General - subparagraph (1)(D) and subdivisions (2), (3), (4) and (5)

Subsection (c) Inspection and entry
Subsection (d) Effect of a Permit - subdivisions (1) and (4)
Subsection (e) Duty to Comply
Subsection (f) Proper Operation and Maintenance
Subsection (g) Sludge Disposal
Subsection (h) Duty to Mitigate
Subsection (i) Facility Modifications, Notification - subdivisions
(1) and (4)
Subsection (j) Monitoring Records and Reporting Requirements - subdivisions
(1), (6), (7), (8), (9), and (11) (except subparagraphs (9)(A)(2), and (9)(C))
Subsection (k) Bypass
Subsection (m) Effluent Limitations Violations
Subsection (n) Enforcement
Subsection (o) Resource Conservation
Subsection (p) Spill Prevention and Control
Subsection (q) Instrumentation, Alarms, Flow Recorders
Subsection (r) Equalization

Section 22a-430-4

Subsection (t) Prohibitions
Subsection (p) Revocation, Denial, Modification, Appendices

- b) The following additional terms and conditions shall be complied with:
1. This Authorization is for the discharge of (A) pollutants in quantities and concentrations as specified in this Authorization and in correspondence submitted by NNECO, as set forth in section II. of this Authorization; and (B) any substances resulting from the processes or activities described in this Authorization and correspondence by NNECO, as set forth in sections I. and II. of this Authorization in concentrations and quantities which the Commissioner determines cannot reasonably be expected to cause pollution. However, the Commissioner may seek an injunction or issue an order to prevent or abate pollution, and may seek criminal penalties against a person who willfully or with criminal negligence causes or threatens pollution.
 2. Discharge of any substance which is not from the processes or activities described in this Authorization in correspondence submitted by NNECO, as set forth in sections I. and II. of this Authorization, shall be considered a violation of this Authorization unless it is authorized by an individual permit issued under Section 22a-430 of the General Statutes or a general permit issued under section 22a-430b of the General Statutes.
 - 3) Within fifteen days after the date NNECO becomes aware of a change in any information submitted to the Commissioner under any registration of this Authorization, or that any such information was inaccurate or misleading or that any relevant information was omitted, NNECO shall submit the correct or omitted information in writing to the Commissioner.
 - 4) Nothing in this Authorization shall relieve NNECO of other obligations under applicable federal, state and local law.
 - 5) Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this Authorization by NNECO shall be signed

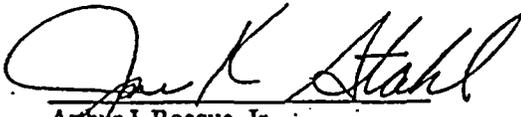
by NNECO and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense".

- 6) Any false statement in any information submitted pursuant to this Authorization may be punishable as a criminal offense under Section 22a-438 of the General Statutes or, in accordance with Section 22a-6, under Section 53a-157 of the General Statutes.
- 7) The Commissioner reserves the right to make appropriate revisions to this Emergency Authorization in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be necessary to adequately protect human health and the environment.
- 8) The Commissioner may order summary suspension of this Authorization in accordance with Section 4-182 of the Connecticut General Statutes.

I find that this Authorization is necessary to prevent, abate or mitigate an imminent threat to human health and the environment, and such Authorization is not inconsistent with the Clean Water Act.

Entered as an Emergency Authorization of the Commissioner of Environmental Protection.

10/13/00
Date



Arthur J. Rocque, Jr.
Commissioner

Facility ID. 152-003
Application No. 2000-10EA
Authorization No. EA0100176

<http://www.ctnow.com/news/custom/newsat3/hc-alert1222.artdec22,1,2391647.story?coll=hc-big-headlines-breaking>

Rowland: 'Let Us Do The Worrying'



By LYNNE TUOHY
Courant Staff Writer

December 22 2003

Gov. John G. Rowland deployed hundreds of state troopers and members of the National Guard to the state's trains, bridges, ports and Millstone nuclear power plant Sunday, while at the same time encouraging residents to go on with their holiday shopping and travel plans.

"My message is very simple: Let us do the worrying," Rowland said at a late afternoon press conference. "I want everyone to shop, to enjoy their parties and their families. Precautions are in place.

"First and foremost, do not cancel your travel plans," Rowland said. "Do not be afraid to use the planes, the trains, the buses."

Rowland spoke forcefully and reassuringly on the elevation of the national security threat level to "high." He spoke of his conversation earlier in the day with U.S. Homeland Security Secretary Tom Ridge, and of his request that federal officials order a no-fly zone over Millstone and the Indian Point Nuclear Power Station, on the lower Hudson River in New York.

Rowland echoed Ridge's statements that the volume of threats picked up by intelligence agencies, as well as specifics about again using airplanes as weapons and suicide bombings, were cause for concern.

"The key point here is that the threats are very significant, very credible and their volume is far greater than in the past," Rowland said. "That the event will be greater and more harmful than 9/11 specifically gets our attention."

Rowland said he spoke with New York Gov. George Pataki mid-afternoon to coordinate added security on Metro North trains, which were staffed by at least one Connecticut state trooper beginning at 4 p.m. Sunday. Truck weigh stations across Connecticut were opened and will remain so around the clock, with tractor trailers required to check-in for inspection. "That will be a 24/7 coverage," Rowland said.

He referred to the Millstone nuclear power plant as "my most significant concern," and said that the aircraft operated by the state police - Trooper 1 - as well as three other aircraft would be running surveillance flights over the plant. Rowland said that securing a no-fly zone for a 10-mile radius over the plant is a difficult task, as national



transportation interests are implicated. Such a no-fly zone was in effect in the days following the Sept. 11, 2001, attacks, but a request by Rowland last March during a period of high alert was denied.

Rowland this morning was to hold a conference call to brief all of the state's mayors, first selectmen and police and fire chiefs.

"I want to tell all our residents that we are as prepared and safe as we possibly can be," Rowland said. "I encourage everyone to go on with their plans; do not cancel any plans."

Rowland said he knew of no specifics about targets, but in his letter to Ridge requesting the no-fly zone, the governor noted that Millstone "has been identified by your staff as a Connecticut site of 'high interest' for additional security protection."

He said that while Bradley International Airport obviously would be on heightened security status, he did not anticipate any added inconvenience to travelers. "Most travelers will not see any significant difference," Rowland said.

The heightened alert status did not seem to faze people who were out and about Sunday afternoon. Barbara Becker of West Hartford was at the Connecticut Expo Center, trying with others to set a new Guinness Book record for number of dreidels spinning at one time.

"I never think about those kinds of things," she said. "We go about our daily lives the way we normally do."

Becker said calls for increased security would make her worry more about family members who are traveling abroad than about safety inside the country's borders.

Later in the evening, Christopher Mason of Hartford said it's smart for security forces to be cautious, but the average person isn't being given enough information to know how to react to the orange alert.

"It's nothing that I have any control over," he said. "I'm just going to live my life the way it is."

The governor did not say how many security personnel were being deployed. He said the number was "significant" and included state troopers, bomb dogs, National Guard personnel and those staffing the weigh stations. Most, if not all, of the cost of overtime and additional staffing would be picked up by the federal Department of Homeland Security, he said.

The state is close to wrapping up a homeland security report that details possible targets in Connecticut, as well as the strengths and vulnerabilities of the state's security measures. The report is scheduled to be submitted to the federal homeland security office next month, and is a prerequisite for the release of about \$35 million in federal funds to

pay for enhanced security measures. It will not be released publicly. Rowland said the work done to prepare the report, as well as progress in increasing security, has paid off.

"Are we in better shape than we were six months ago when we had our last high alert? The answer is we're significantly better prepared," Rowland said.

Courant staff writers Carolyn Moreau and Roselyn Tantraphol contributed to this story.

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May 24, 2004

NOTE TO: File

FROM: Richard Emch, Project Manager */RA/*
Environmental Section
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: DOCKETING OF ADDITIONAL DOCUMENTS PERTAINING TO WINTER FLOUNDER IN SUPPORT OF THE ENVIRONMENTAL REVIEW OF THE DOMINION NUCLEAR COMPANY'S LICENSE RENEWAL APPLICATION FOR MILLSTONE POWER STATION

This Note to File, makes the following correspondence publicly available:

- Millstone Power Station: An Evaluation of Cooling Water System Alternatives, August 2001.

The attached memo from Richard Gallagher of Dominion Nuclear dated March 29, 2004, provides the information to be docketed.

Attachments: As stated

Docket Nos.: 50-336 and 50-423

Accession nos.:

1. Note to File: **ML041460283**
2. Attachments: 1) Millstone Power Station: An Evaluation of Cooling Water System Alternatives, August, 2001: **ML040980392**
3. Att. 2: Memo from R. Gallagher, DNC.: **ML041120271**, dated 4/16/04
4. Att. 3: Memo from R. Gallagher, DNC : **ML040930259**, dated 4/29/04
5. Pkg: **ML041460287**

Document name: C:\ORPCheckout\FileNET\ML041460283.wpd

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NAME	M. Jenkins	L. Fields	R. Emch
DATE	5/24/04	5/21/04	5/24/04

OFFICIAL RECORD COPY

May 24, 2004

NOTE TO: File

FROM: Richard Emch, Project Manager *IRA*
Environmental Section
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: DOCKETING OF ADDITIONAL DOCUMENTS PERTAINING TO WINTER
FLOUNDER IN SUPPORT OF THE ENVIRONMENTAL REVIEW OF THE
DOMINION NUCLEAR COMPANY'S LICENSE RENEWAL APPLICATION FOR
MILLSTONE POWER STATION

This Note to File, makes the following correspondence publicly available:

- Millstone Power Station: An Evaluation of Cooling Water System Alternatives, August 2001.

The attached memo from Richard Gallagher of Dominion Nuclear dated March 29, 2004, provides the information to be docketed.

Attachments: As stated

Docket Nos.: 50-336 and 50-423

June 1, 2004

NOTE TO: File

FROM: Richard Emch, Senior Project Manager *IRA*
Environmental Section
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: DOCKETING OF DOCUMENTS PERTAINING TO WINTER FLOUNDER IN
SUPPORT OF THE MILLSTONE POWER STATION UNITS 2 AND 3
ENVIRONMENTAL REVIEW AND LICENSE RENEWAL APPLICATION

This Note to File, makes the following correspondence publicly available:

- Feasibility Study of Cooling Water System Alternatives to Reduce Winter Flounder Entrainment at Millstone Units 1, 2, & 3, January 1993.
- Monitoring the Marine Environment of Long Island Sound at Millstone Power Station, Waterford, Connecticut, Annual Report 2001.
- Monitoring the Marine Environment of Long Island Sound at Millstone Power Station, Waterford, Connecticut, Annual Report 2002.
- Report to Millstone Environmental Laboratory, Ecological Advisory Committee, Analysis of winter flounder larvae, by Dr. J. Crivello, University of Connecticut, Storrs, CT, February 12, 2002.
- Characterization of Winter Flounder (*Pseudopleuronectes americanus*) Larval Genetic Stock Structure Within Eastern Long Island Sound: Estimation of Larval Entrainment and Recruitment, A Report Made to the Millstone Environmental Laboratory, Millstone Power Station, Waterford, Connecticut.

The attached memos from Richard Gallagher of Dominion Nuclear dated March 25, and March 29, 2004 provide a listing of the information to be docketed.

Attachments: As stated

Docket Nos.: 50-336 and 50-423

Accession nos.: See next page

Note to File: **ML041560169**

Pkg: **ML041560198**

Document name: C:\ORPCheckout\FileNET\ML041560169.wpd

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NAME	M. Jenkins	L. Fields	R. Emch
DATE	6/1/04	6/1/04	6/1/04

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**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of :
DOMINION NUCLEAR CONNECTICUT, INC. :Docket Nos. 50-336-LR,
50-423-LR
(Millstone Nuclear Power Station, :
Units 2 and 3) : **ASLBP No. 04-824-01-LR**

CERTIFICATION

I hereby certify that a copy of the foregoing "Connecticut Coalition Against Millstone Motion for Reconsideration and for Request for Leave to Amend Petition" and accompanying "Petition for Review" was sent via U.S. Mail, postage pre-paid on July 9, 2004 to the following

Administrative Judge
Dr. Paul B. Abramson, Chair
Atomic Safety and Licensing Board
Mail Stop T-3 F23
U.S. Nuclear Regulatory Commission
Washington DC 20555-0001
pba@nrc.gov

Administrative Judge
Ann Marshall Young
Atomic Safety and
Licensing Board
Mail Stop T-3 F23
U.S. Nuclear Regulatory
Commission
amy@nrc.gov

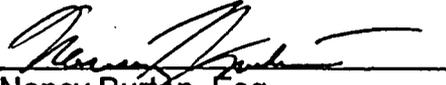
Administrative Judge
Dr. Richard P. Cole
Atomic Safety and Licensing Board
Mail Stop T-3, F23
U.S. Nuclear Regulatory Commission
Washington DC 20555-0001
Rfc1@nrc.gov

Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington DC 20555
(Attention: Rulemakings and Adjudication Staff)
(Original + 2)
hearingdocket@nrc.gov
JMC3@nrc.gov

Office of Commission Appellate Adjudication
U.S. Nuclear Regulatory Commission
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