

50-220



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 24, 1999

Mr. John H. Mueller
Chief Nuclear Officer
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
Operations Building, Second Floor
P.O. Box 63
Lycoming, NY 13093

SUBJECT: CORE SHROUD REINSPECTION PLAN FOR REFUELING OUTAGE 15, NINE MILE POINT NUCLEAR STATION, UNIT NO. 1 (TAC NO. MA4491)

Dear Mr. Mueller:

By letter dated December 30, 1998, Niagara Mohawk Power Corporation (NMPC) submitted its plans for reinspecting the core shroud at Nine Mile Point Nuclear Station, Unit 1 (NMP1) during refueling outage No. 15 (RFO15), scheduled to begin about April 14, 1999. The plans addressed reinspection of the shroud repair components, the shroud repair anchorages, and the shroud's horizontal, vertical, and ring segment welds. The reinspection details included the inspection methods to be used.

NMPC stated that the inspection scope will meet or exceed the inspection scope recommended for a repaired shroud in BWRVIP-07, "BWR Vessel and Internals Project Guidelines for Reinspection of BWR Core Shrouds," and that all examinations will be performed in accordance with the requirements in BWRVIP-03, "Reactor Pressure Vessel and Examination Guidelines." The proposed reinspection plan is further summarized below:

Shroud Repair Assemblies

1. A visual inspection, using a combination of VT-3 and EVT-1, will be performed from both sides of each of the four entire shroud repair assemblies (a.k.a., tie rod assemblies). The VT-3 will verify that all tie rod assembly components remain in their as-installed condition. The EVT-1 will be used to inspect the latches, top support, and the tie rod assembly anchorage locations. In addition, the tightness of the tie rod assemblies will be verified by visual examination and the tie rod nuts will be retorqued to the original installation torque.

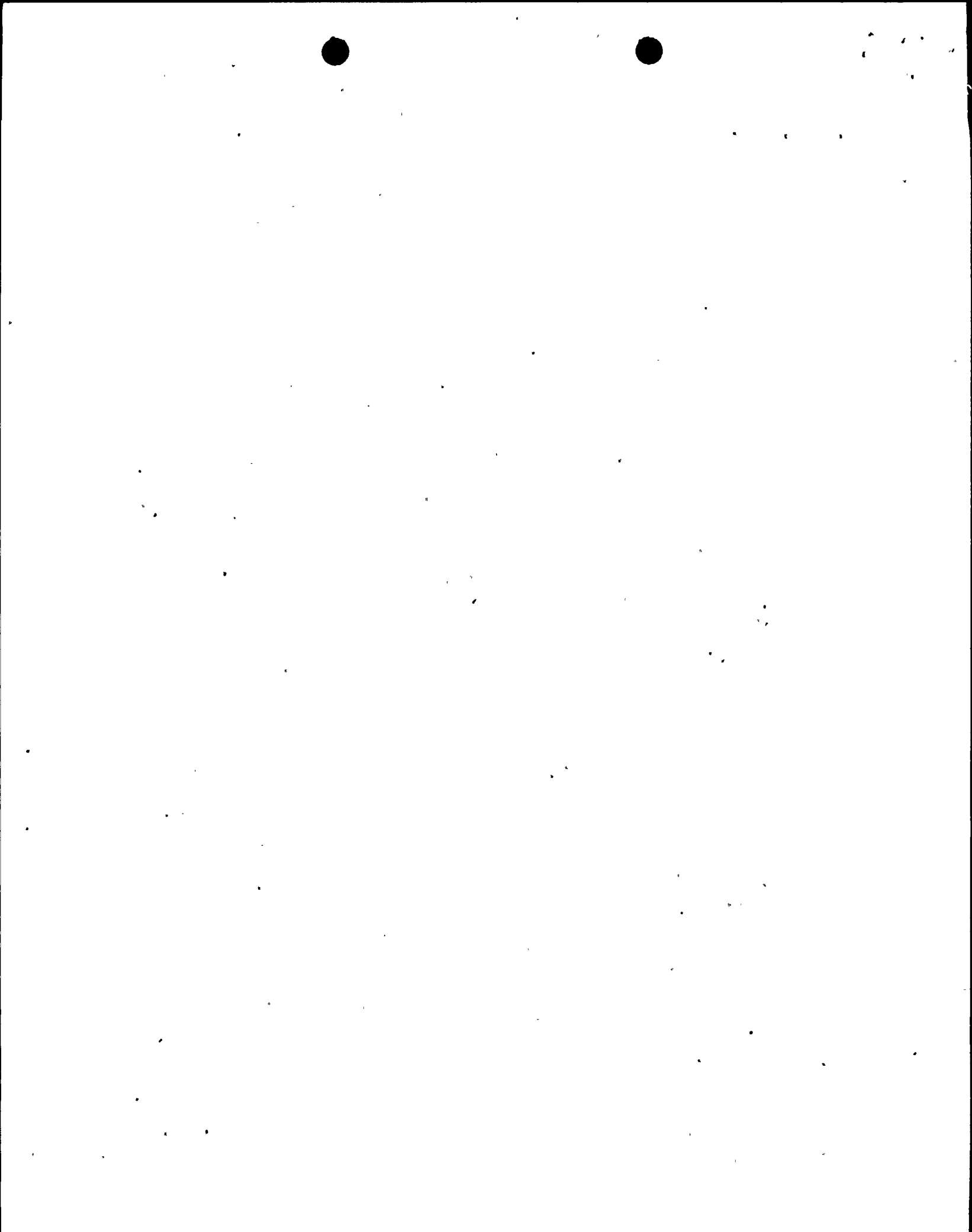
Vertical Welds

2. The inspection will be performed on all shroud vertical welds. The vertical welds are designated as V3, V4, V7, V8, V9, V10, V11, V12, V15 and V16. All accessible areas of each weld will be inspected by ultrasonic testing (UT) or a combination of UT and enhanced visual examinations (EVT-1).
3. UT inspections will be performed on all the accessible portions of the ring segment welds. The ring segment welds are designated as V1 and V2 in the upper shroud ring,

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V5 and V6 in the shroud top guide ring, and V13 and V14 in the shroud core plate ring. If a ring segment weld cannot be located, a UT inspection of an amount of ring circumference determined to be sufficient to verify the effectiveness of the shroud horizontal weld repair will be performed.

Horizontal Welds

4. The shroud horizontal circumferential welds are structurally replaced by the shroud repair assemblies and, except for shroud support welds H8 and H9, do not need to be inspected.
5. An EVT-1 will be performed to reinspect the flaw indications at shroud support weld H8. The flaw indications, detected during 1995 (RFO13) and 1997 (RFO14), are small and the results of flaw evaluation showed that these flaws do not require UT inspection until the year 2001 (RF016).
6. The shroud support weld H9 will be inspected by EVT-1 from the annulus in accordance with the recommendations in BWRVIP-38, "BWR Shroud Support Inspection and Flaw Evaluation Guidelines."

The NRC staff has reviewed NMPC's submittal and has determined that the core shroud reinspection plan for NMP1 RFO15 follows the guidelines in BWRVIP-07 and the NRC staff's recommendations in its associated safety evaluations dated September 15, 1997, and April 27, 1998. Therefore, the proposed core shroud reinspection plan is acceptable. The NRC staff is in the final phase of completing its review of BWRVIP-38, and on the basis of that review, finds BWRVIP-38 to be acceptable for use regarding inspection of shroud support weld H9 during NMP1 RFO15. NMPC should incorporate the NRC staff's recommendations once the NRC has issued its safety evaluation on BWRVIP-38.

NMPC's submittal (page 1 of Attachment) also states that "[p]rovided the inspection results are bounded by the existing Nine Mile Point Unit 1 (NMP1) structural analysis following the planned inspection, no vertical weld repairs will be installed....". The NRC staff notes that the results of NMPC's previous estimation of the fluence level showed that the maximum fluence level at the end of the current fuel cycle would be near the threshold value of 5×10^{20} n/cm² in some parts of the shroud. This threshold value of fluence is derived from the limiting conditions of applicability of the crack growth rate data. Exceeding the fluence threshold value, as may eventually occur in some shroud regions, would impact the bounding crack growth rate used in the flaw evaluations. NMPC should address fluence level distribution corresponding to the end of the proposed operating period until the next reinspection, and its impact upon the bounding crack growth rate used in the flaw evaluations, to determine whether or not repairs are required based upon NMPC's flaw evaluations.

On the basis of the BWRVIP commitment on behalf of the BWR Owner's, we assume that you are following the BWRVIP program for inspection, evaluation, and repair of the other reactor vessel internals at NMP1. If not, we request that you inform us promptly of any significant exceptions regarding RFO15 activities.



J. H. Mueller

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The NRC staff acknowledges your commitment to define the scope of the core shroud reinspection for RFO16 at least 3 months before the start of RFO16.

If you have questions regarding this letter, contact me by phone at (301) 415-3049 or by electronic mail at dsh@nrc.gov.

Sincerely,



Darl S. Hood, Senior Project Manager
Project Directorate I-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-220

cc: See next page



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Project Directorate I-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

John H., Mueller
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Nine Mile Point Nuclear Station
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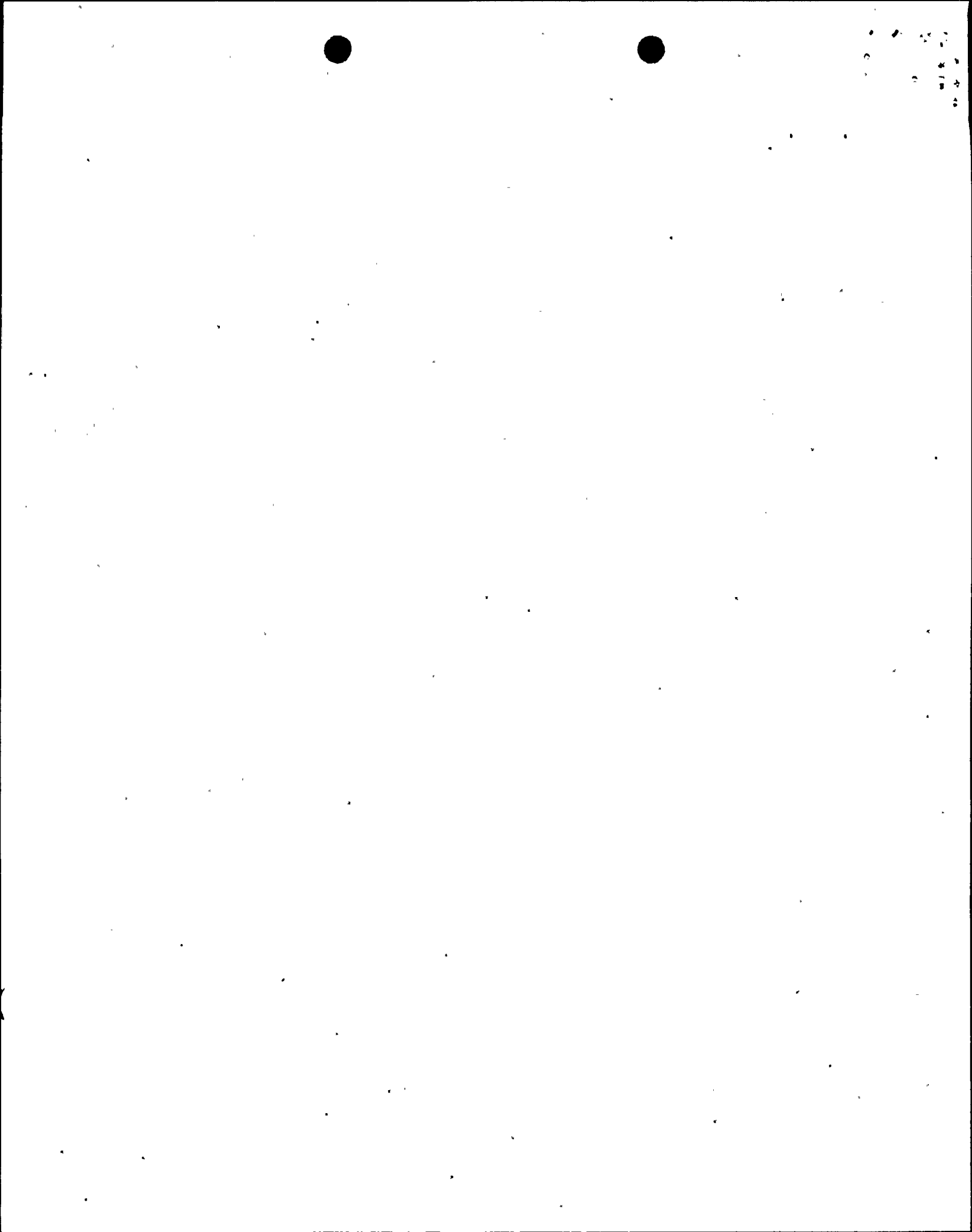
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DATED: March 24, 1999

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NUCLEAR STATION, UNIT NO. 1

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cc: Plant Service list

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