

July 1990

Docket No. 50-410

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Mr. Lawrence Burkhardt III
Executive Vice President, Nuclear Operations
Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Dear Mr. Burkhardt:

SUBJECT: ISSUANCE OF AMENDMENT ON SNUBBER SURVEILLANCE (TAC NO. 75302)

The Commission has issued the enclosed Amendment No. 19 to Facility Operating License No. NPF-69 for the Nine Mile Point Nuclear Station Unit No. 2 (NMP-2). The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated November 17, 1989, as amended April 26, 1990.

This amendment revises the surveillance requirements for snubbers in Technical Specification 4.7.5 to provide reduced testing and a corresponding reduction in man-rem exposure. This change is consistent with the currently endorsed American Society of Mechanical Engineers standard on snubber testing. This amendment also revises the functional test failure analysis of locked-up snubbers.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

ORIGINAL SIGNED BY:

Robert E. Martin, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 19 to NPF-69
- 2. Safety Evaluation

cc: w/enclosures
See next page

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Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station
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DATED: July 13, 1990

AMENDMENT NO. 19 TO FACILITY OPERATING LICENSE NO. NPF-69 NINE MILE POINT
NUCLEAR STATION UNIT 2

Docket File

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

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-410

NINE-MILE POINT NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 19
License No. NPF-69

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Niagara Mohawk Power Corporation (the licensee) dated November 17, 1989, as amended April 26, 1990, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-69 is hereby amended to read as follows:

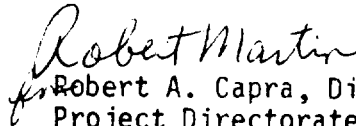
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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 19 are hereby incorporated into this license. Niagara Mohawk Power Corporation shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 13, 1990

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 19 TO FACILITY OPERATING LICENSE NO. NPF-69

DOCKET NO. 50-410

Revise Appendix A as follows:

Remove Pages

3/4 7-16
3/4 7-18
3/4 7-19
3/4 7-20
3/4 7-21

Insert Pages

3/4 7-16
3/4 7-18
3/4 7-19
3/4 7-20
3/4 7-21

PLANT SYSTEMS

3/4.7.5 SNUBBERS

LIMITING CONDITIONS FOR OPERATION

3.7.5 All snubbers shall be OPERABLE. The only snubbers excluded from the requirements are those installed on non-safety-related systems and then only if their failure or failure of the system on which they are installed would have no adverse effect on any safety-related system.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3 and OPERATIONAL CONDITIONS 4 and 5 for snubbers located on systems required OPERABLE in those OPERATIONAL CONDITIONS.

ACTION: With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.5 on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.5 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Snubber Types

As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each category may be inspected independently according to the schedule below. The first inservice visual inspection of snubbers shall be performed after 2 months but within 12 months of commencing POWER OPERATION and shall include all snubbers. If all snubbers are found OPERABLE during the first inservice visual inspection, the second inservice visual inspection shall be performed at the first refueling outage. Otherwise, subsequent visual inspections shall be performed in accordance with the following schedule;

PLANT SYSTEMS

SNUBBERS

SURVEILLANCE REQUIREMENTS

4.7.5 (Continued)

e. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers shall be tested using one of the following sample plans for each type of snubber. The sample plan shall be selected before the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected before the test period or the sample plan used in the previous test period shall be implemented:

1. An initial representative sample of at least 10% of the total of each type of snubber shall be functionally tested either in place or in a bench test. For any snubber(s) of a type that do not meet the functional test acceptance criteria of Specification 4.7.5.f, an additional sample of at least 1/2 the size of the initial sample lot shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, $1 + C/2$, where C is the total number of snubbers found to be unacceptable or all snubbers in the failure mode group have been tested; or
2. An initial representative sample of 37 snubbers of each type shall be functionally tested in accordance with Figure 4.7.5-1. "C" is the total number of snubbers found not meeting the acceptance requirements of Specification 4.7.5.f. The cumulative number of snubbers of a type tested is denoted by "N". If at any time the point plotted falls in the "Accept" region, testing of snubbers may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers shall be tested until the point falls in the "Accept" region or all the snubbers of that type have been tested.

The representative sample selected for the functional test sample plans shall be randomly selected from the snubbers of each type and reviewed before beginning the testing. The review shall ensure, as far as practicable, that they are representative of the various configurations, operating environments, range of size, and capacity of snubbers of each type. Snubbers placed in the same locations as snubbers that failed the previous functional test shall be retested at the time of the next functional test but shall not be included in the sample plan. Testing equipment failure during functional testing may invalidate the day's testing and allow that day's testing to resume anew at a later time provided all snubbers tested with the failed equipment during the day of equipment failure are retested.

If during the functional testing, additional testing is required due to failure of snubbers, the unacceptable snubbers may be categorized into failure mode group(s). A failure mode group shall include all

PLANT SYSTEMS

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SURVEILLANCE REQUIREMENTS

4.7.5.e (Continued)

unacceptable snubbers that have a given failure mode and all other snubbers subject to the same failure mode. Once a failure mode group has been established, it can be separated for continued testing apart from the general population of snubbers. However, all unacceptable snubbers in the failure mode group shall be counted as one unacceptable snubber for additional testing in the general population. Testing in the failure mode group shall be based on the number of unacceptable snubbers and shall continue until no more failures are found or all snubbers in the failure mode group have been tested. Any additional unacceptable snubbers found in the failure mode group shall be counted for continued testing only for that test failure mode group. In the event that a snubber(s) becomes included in more than one test failure mode group, it shall be counted in each failure mode group and shall be subject to the corrective action of each test failure mode group.

f. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range in both tension and compression;
2. For mechanical snubbers, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel; and

Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.

g. Functional Test Failure Analysis

An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers irrespective of type which may be subject to the same failure mode.

For the snubbers found inoperable, an engineering evaluation shall be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

PLANT SYSTEMS

SNUBBERS

SURVEILLANCE REQUIREMENTS

4.7.5.g (Continued)

If any snubber selected for functional testing either fails to lock up or fails to move, i.e., frozen-in-place, the cause will be evaluated and if caused by manufacturer or design deficiency, or unexpected transient event, all snubbers of the same type subject to the same defect shall be functionally tested. Snubbers of the same type subject to the same defect shall be categorized as one failure mode group for the purpose of additional testing per Specification 4.7.5.e.

h. Functional Testing of Repaired and Replaced Snubbers

Snubbers that fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers that have repairs that might affect the functional test result shall be tested to meet the functional test criteria before installation in the unit. Mechanical snubbers shall have met the acceptance criteria subsequent to their most recent service, and the freedom-of-motion test must have been performed within 12 months before being installed in the unit.

i. Snubber Service Life Program

The service life of all snubbers shall be monitored to ensure that the service life is not exceeded between surveillance inspections. The maximum expected service life for various seals, springs, and other critical parts shall be determined and established on the basis of engineering information and shall be extended or shortened on the basis of monitored test results and failure history. Critical parts shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be OPERABLE. The parts replacements shall be documented and the documentation shall be retained in accordance with Specification 6.10.1.2.

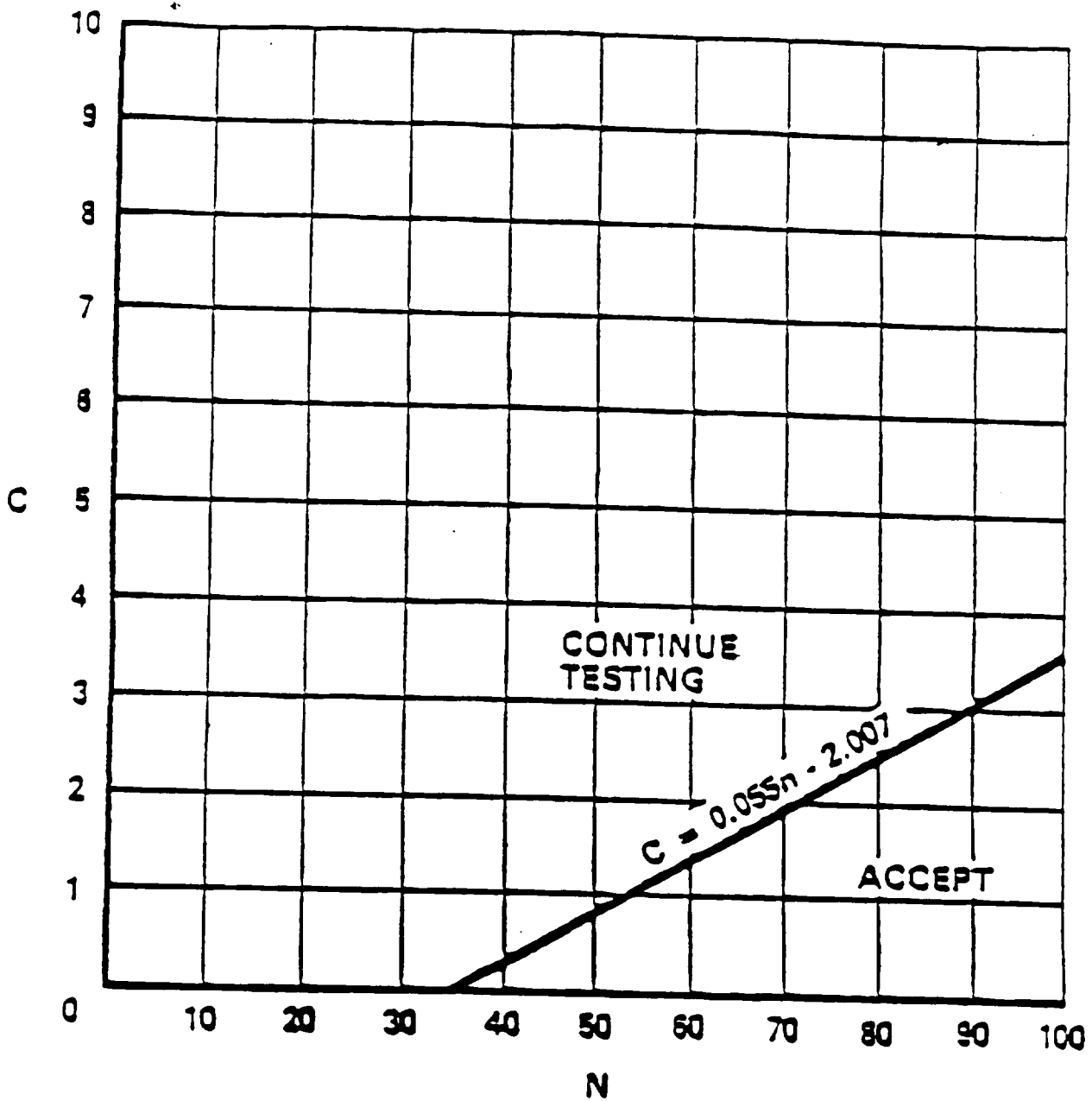


Figure 4.7.5-1 Sample Plan 2 for Snubber Functional Test



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 19 TO FACILITY OPERATING LICENSE NO. NPF-69
NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT NUCLEAR POWER STATION, UNIT NO. 2
DOCKET NO. 50-410

INTRODUCTION

By letter dated November 17, 1989, as amended April 26, 1990, Niagara Mohawk Power Corporation (the licensee) proposed changes to the Technical Specifications for Nine Mile Point Unit 2. The proposed amendment revises Technical Specification 4.7.5 which provides the surveillance requirement for snubbers installed at Nine Mile Point Unit 2.

The American Society of Mechanical Engineers (ASME) standard on snubber testing, OMc-1990, Part 4, contains two sample plans for inservice functional testing of snubbers. The two sample plans, when compared to the three sample plans currently contained in Technical Specification Section 4.7.5.e, provide reduced testing and a corresponding reduction in man-rem exposure while still providing adequate assurance of snubber reliability. Section 4.7.5.e has, therefore, been modified in accordance with ASME/ANSI OMc-1990, Part 4. The proposed amendment also revises the functional test failure analysis in Technical Specification Section 4.7.5.g to add unexpected transient events as a cause of locked-up snubbers.

BACKGROUND

As this and the following statements from the licensee's submittal indicate, the first of three technical specification sampling plans, the "10 percent plan," described in Specification 4.7.5.e(1) requires 10% of the snubbers to be tested periodically. It requires testing of an additional 10% of the snubbers for each snubber not meeting the acceptance criteria of Specification 4.7.5.f. The proposed change modifies this plan to require only a 5% additional testing for each snubber that fails functional testing as opposed to 10% additional testing presently required. Reducing the percentage of snubbers to be retested does not undermine the effectiveness of this surveillance. The initial test sample remains the same and is sufficient to provide an adequate sampling of the snubbers. This change will reduce the amount of additional testing required and thus reduce man-rem exposure and safety concerns associated with unnecessary functional testing. This change is consistent with the ASME OMc-1990, Part 4, document.

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The second sampling plan, the "37 plan," described in Specification 4.7.5.e(2) requires that a representative sample of snubbers be tested periodically in accordance with Figure 4.7.5-1. Figure 4.7.5-1 provides the acceptance criteria method for the functional test results and denotes a "reject" region and a "continue testing" region. If at any time the plotted test results fall within this "reject" region, then all snubbers are to be functionally tested. The proposed change revises surveillance requirement Specification 4.7.5.e(2) and Figure 4.7.5-1 to delete the "reject" region and substitute an expanded "continue testing" region.

With the deletion of the "reject" line, plotting of results by lot or individual basis becomes a moot point because snubbers must continue to be tested until the point falls into the "accept" region or until all snubbers have been tested.

If testing continues to between 100-200 snubbers and the accept region has not been attained, then the actual percent of population quality (number of snubbers not found to meet acceptance criteria)/(total snubber population) would be used to indicate the probability of extended or 100 percent testing. A population quality of greater than or equal to 5% failed snubbers will probably result in extended testing. The proposed change also deletes references to the "reject" region in the test of Technical Specification 4.7.5.e(2).

Figure 4.7.5-1 as it appears in the technical specification was developed using "Wald's Sequential Probability Ratio Plan." Statistical studies using Wald's sequential sampling plan indicate that a major change in the reject line caused an insignificant change in the accept line or, in other words, acceptance is independent of rejection. These studies also demonstrate that while the probability of false acceptance of a bad snubber population under the proposed amendment still exists, it is negligible. As long as the "reject" line remains in the sample plan there is some possibility of rejecting a good snubber population and consequently requiring an unnecessary 100% functional testing of snubbers with attendant ALARA and safety concerns, manpower utilization and outage extension. The proposed technical specification change will alleviate these problems and still ensure continued or additional testing if snubber quality of failed snubbers is equal to or greater than 5%. These changes have been previously evaluated by the NRC through ANSI/ASME OMc-1990, Part 4, participation and by granting similar technical specification changes.

The third sampling plan, the "55 plan," described in Specification 4.7.4.e(3) also requires that a representative sample of snubbers be periodically tested. Deleting the "Reject" line from the "37 plan" is not a Wald sequential plan and, as such, has been deleted from the ANSI/ASME OMc-1990, Part 4, document.

The proposed change clarifies additional functional testing requirements due to failure of snubbers. Technical Specification 4.7.5.e states that if during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional test results shall be reviewed at that time to determine if additional samples should be limited to the type of

snubber which has failed the functional testing. The proposed change allows categorization of unacceptable snubbers into failure mode groups. A test failure mode group shall include all unacceptable snubbers that have a given failure mode and all other snubbers subject to the same failure mode. It allows independent testing of failure mode groups based on the number of unacceptable snubbers and requires one additional test sample from the general population for each failure mode group to provide assurance that failure mode groups have been properly established. This change is consistent with the ASME OMC-1990, Part 4, document.

The proposed change also addresses the functional test failure analysis of locked-up snubbers. Technical Specification 4.7.5.g states that if the cause of the locked-up snubbers is due to manufacturer or design deficiency, all snubbers of the same type subject to the same defect shall be functionally tested. The proposed change includes unexpected transient events as a cause of locked-up snubbers in addition to manufacturer or design deficiency. All locked snubbers shall be replaced or repaired to original qualified condition.

Tested snubbers of the same type subject to the same defect are treated as one failure mode group. One additional test sample from the general population is required to provide assurance that the deficiency or transient event has been properly defined.

Additionally the proposed amendment will replace the title "Inspection Types" currently used in Technical Specification Section 4.7.5.a with "Snubber Types" to be consistent with the terminology used in Technical Specification Section 4.7.5.a. This change is administrative in nature and is, therefore, acceptable.

EVALUATION

The NRC staff has concluded based on staff review and on the considerations discussed above that the proposed changes to Technical Specification Section 4.7.5.e are acceptable. These changes would result in reduced testing and a corresponding reduction in man-rem exposure while providing adequate assurance of snubber reliability. They are also consistent with the ASME/ANSI OMC-1990, Part 4, document. The staff also finds the proposed change to Technical Specification Sections 4.7.5.a and 4.7.5.g to be acceptable.

The licensee's initially proposed change to TS 4.7.5.b to make the term "first refueling outage" more specific by adding "18 months ($\pm 25\%$)" was withdrawn by letter dated April 26, 1990. The staff finds this to be acceptable and the second inspection shall be performed at the first refueling outage.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to the installation or use of the facility components located within the restricted areas as defined in 10 CFR 20 and changes to the surveillance requirements. The staff has determined that this amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously

issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: July 13, 1990

PRINCIPAL CONTRIBUTOR:

J. Rajan