

Mr. C. Randy Hutchinson  
 Vice President, Operations ANO  
 Entergy Operations, Inc.  
 1448 S. R. 333  
 Russellville, AR 72801

February 18, 1998

SUBJECT: NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY  
 OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS  
 CONSIDERATION DETERMINATION AND OPPORTUNITY FOR HEARING -  
 ARKANSAS NUCLEAR ONE, UNIT 1 (TAC NO. MA0827)

Dear Mr. Hutchinson:

Enclosed is a copy of the subject notice that relates to your application for amendments dated February 9, 1998. The proposed amendments would allow the use of the repair roll technology (reroll) for the upper tubesheet region of the ANO-1 steam generators. The reroll technology is proposed as an alternative to the existing technical specification requirements to either sleeve or plug steam generator tubes found during inservice inspections to have defects in the upper tubesheet region that exceed the stated repair criteria.

The notice has been forwarded to the Office of the Federal Register for publication.

Sincerely,

ORIGINAL SIGNED BY:  
 William Reckley, Project Manager  
 Project Directorate IV-1  
 Division of Reactor Projects III/IV  
 Office of Nuclear Reactor Regulation

Docket No. 50-313

cc: See next page

DISTRIBUTION:

Docket File	PUBLIC	PD4-1 r/f	OGC
J. Roe	C. Hawes	W. Reckley	ACRS
T. Gwynn, RIV	E. Adensam (EGA1)	J. Hannon	

Document Name: AN00827.NOT

OFC	PM/PD4-1	LA/PD4-1	PD/PDIV-1
NAME	WReckley	E. Barnhill C. Hawes	J. Hannon
DATE	2/18/98	2/18/98	2/18/98
COPY	YES/NO	YES/NO	YES/NO

OFFICIAL RECORD COPY

OFFICIAL RECORD COPY

9802240400 980218  
 PDR ADOCK 05000313  
 P PDR





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

February 18, 1998

Mr. C. Randy Hutchinson  
Vice President, Operations ANO  
Entergy Operations, Inc.  
1448 S. R. 333  
Russellville, AR 72801

**SUBJECT: NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY  
OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION AND OPPORTUNITY FOR HEARING -  
ARKANSAS NUCLEAR ONE, UNIT 1 (TAC NO. MA0827)**

Dear Mr. Hutchinson:

Enclosed is a copy of the subject notice that relates to your application for amendments dated February 9, 1998. The proposed amendments would allow the use of the repair roll technology (reroll) for the upper tubesheet region of the ANO-1 steam generators. The reroll technology is proposed as an alternative to the existing technical specification requirements to either sleeve or plug steam generator tubes found during inservice inspections to have defects in the upper tubesheet region that exceed the stated repair criteria.

The notice has been forwarded to the Office of the Federal Register for publication.

Sincerely,

A handwritten signature in black ink that reads "William Reckley". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

William Reckley, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-313

cc: See next page

**Mr. C. Randy Hutchinson**  
Entergy Operations, Inc.

**Arkansas Nuclear One, Unit 1**

**cc:**

**Executive Vice President  
& Chief Operating Officer**  
Entergy Operations, Inc.  
P. O. Box 31995  
Jackson, MS 39286-199

**Vice President, Operations Support**  
Entergy Operations, Inc.  
P. O. Box 31995  
Jackson, MS 39286-1995

**Director, Division of Radiation  
Control and Emergency Management**  
Arkansas Department of Health  
4815 West Markham Street, Slot 30  
Little Rock, AR 72205-3867

**Wise, Carter, Child & Caraway**  
P. O. Box 651  
Jackson, MS 39205

**Winston & Strawn**  
1400 L Street, N.W.  
Washington, DC 20005-3502

**Manager, Rockville Nuclear Licensing**  
Framatone Technologies  
1700 Rockville Pike, Suite 525  
Rockville, MD 20852

**Senior Resident Inspector**  
U.S. Nuclear Regulatory Commission  
P. O. Box 310  
London, AR 72847

**Regional Administrator, Region IV**  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

**County Judge of Pope County**  
Pope County Courthouse  
Russellville, AR 72801

**DISTRIBUTION:**  
 Docket File  
 PDIV-1 r/f  
 CHawes  
 WReckley

February 18, 1998

MEMORANDUM TO: Rules and Directives Branch  
 Division of Administrative Services  
 Office of Administration

FROM: Office of Nuclear Reactor Regulation

SUBJECT: **ENTERGY OPERATIONS, INC. - ARKANSAS NUCLEAR ONE, UNIT 1**

One signed original of the *Federal Register* Notice identified below is attached for your transmittal to the Office of the Federal Register for publication. Additional conformed copies (**Five**) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for submission of Views on Antitrust matters.
- Notice of Consideration of Issuance of Amendment to Facility Operating License. (Call with 30-day insert date).
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).
- Order.
- Exemption.
- Notice of Granting Exemption.
- Environmental Assessment.
- Notice of Preparation of Environmental Assessment.
- Receipt of Petition for Director's Decision Under 10 CFR 2.206.
- Issuance of Final Director's Decision Under 10 CFR 2.206.
- Other: please call Veronica Williams on 415-1302 with the 30 day insert on page 4.

DOCKET NO. 50-368

Attachment(s): As stated

Contact: **W. Reckley**  
 Telephone: **415-1314**

DOCUMENT NAME: AN00827.NOT

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	LA/PD4-1													
NAME	CHawes CMN													
DATE	02/19/98													

OFFICIAL RECORD COPY

UNITED STATES NUCLEAR REGULATORY COMMISSIONENTERGY OPERATIONS, INC.DOCKET NO. 50-368 313NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO  
FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. DPR-51 issued to Entergy Operations, Inc., (the licensee) for operation of the Arkansas Nuclear One, Unit No. 1 (ANO-1), located in Pope County, Arkansas.

The proposed amendment would allow the use of the repair roll technology (reroll) for the upper tubesheet region of the ANO-1 steam generators. The reroll technology is proposed as an alternative to the existing technical specification requirements to either sleeve or plug steam generator tubes found during inservice inspections to have defects that exceed the stated repair criteria. The reroll process has been developed to repair tubes with flaws in the tubesheet region by creating a new mechanical tube to tubesheet structural joint below the tube defect indications.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of

accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

**1. Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.**

The reroll process utilizes the original tube configuration and extends the roll expanded region. Thus all of the design and operating characteristics of the steam generator and connected systems are preserved. The reroll joint length has been analyzed and tested for design, operating, and faulted condition loading.

The qualification of the reroll joint is based on establishing a mechanical roll length which will carry all of the structural loads imposed on the tubes with required margins. A series of tests and analyses were performed to establish this length. Tests that were performed included leak, tensile, fatigue, ultimate load, and eddy current measurement uncertainty. The analyses evaluated plant operating and faulted loads in addition to tubesheet bow effects. Testing and analysis evaluated the tube springback and radial contact stresses due to temperature, pressure, and tubesheet bow. At worst case, a tube leak would occur with the result being a primary to secondary system leak. Any tube leakage would be bounded by the ruptured tube evaluation which has been previously analyzed. The potential for a tube rupture is not increased by the use of the reroll process.

The reroll process establishes a new pressure boundary for the associated tube in the upper tubesheet below the flaw. Qualification testing indicates that normal and faulted leakage from the new pressure boundary joint would be well below the Technical Specification limits. Since the normal and faulted leak rates are well within the Technical Specification limits, the analyzed accident scenarios are still bounding.

Applying a hydraulic expansion prior to making a repair roll near the secondary face of the upper tubesheet minimizes the potential for Obrigheim denting of the tube above the new roll. The hydraulic expansion does not have an adverse impact on the structural integrity of the tube or tubesheet. A tube that is rerolled deep into the tubesheet and not hydraulically expanded has the potential of denting inward if water is trapped between the new and old roll regions. The dented portion of the tube would be outside the pressure boundary and therefore not a safety concern. If the tube were dented, such that future inspections would not be possible, the tube would have to be removed from service.

Based on the Framatome Technologies Inc. qualification, as well as the history for similar industry repair rolls, there are no new safety issues associated with a reroll repair. Therefore, this change does not involve a significant increase in the probability or consequences of any accident previously evaluated.

**2. Does Not Create the Possibility of a New or Different Kind of Accident from any Previously Evaluated.**

The reroll process establishes a new pressure boundary for the associated tube in the upper tubesheet below the flaw. The new roll transition may eventually develop primary water stress corrosion cracking (PWSCC) and require additional repair. Industry experience with roll transition cracking has shown that PWSCC in roll transitions are normally short axial cracks, with extremely low leak rates. The standard MRPC eddy current inspection during the refueling outages have proven to be successful in detecting these defects early enough in their progression to facilitate repair.

In the unlikely event the rerolled tube failed and severed completely at the transition of the reroll region, the tube would retain engagement in the tubesheet bore, preventing any interaction with neighboring tubes. In this case, leakage is minimized and is well within the assumed leakage of the design basis tube rupture accident. In addition, the possibility of rupturing multiple steam generator tubes is not increased. Therefore, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does Not Involve a Significant Reduction in the Margin of Safety.

A tube with degradation can be kept in service through the use of the reroll process. The new roll expanded interface created with the tubesheet satisfies all of the necessary structural and leakage requirements. Since the joint is constrained within the tubesheet bore, there is no additional risk associated with tube rupture. Therefore, the analyzed accident scenarios remain bounding, and the use of the reroll process does not reduce the margin of safety. Consequently, this change does not involve a significant reduction in the margin of safety.

Based upon the reasoning presented above and the previous discussion of the amendment request, Entergy Operations has determined that the requested change does not involve a significant hazards consideration.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the

Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish in the FEDERAL REGISTER a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and should cite the publication date and page number of this FEDERAL REGISTER notice. Written comments may also be delivered to Room 6D22, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Copies of written comments received may be examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

By March 26, 1998, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Tomlinson Library, Arkansas Tech University, Russellville, Arkansas. If a request for a hearing or petition for leave to intervene is filed by the above date,

the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware

and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemakings and Adjudications Staff, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date.

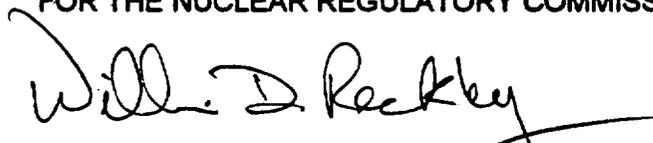
A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to Mr. Nicholas S. Reynolds, Winston & Strawn, 1400 L Street, N.W., Washington, D.C. 20005-3502, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

For further details with respect to this action, see the application for amendment dated February 9, 1998, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Tomlinson Library, Arkansas Tech University, Russellville, Arkansas.

Dated at Rockville, Maryland, this 18th day of February 1998.

FOR THE NUCLEAR REGULATORY COMMISSION



William D. Reckley, Senior Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation