POLICY ISSUE
NOTATION VOTE

October 24, 2008 SECY-08-0161

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: REVIEW OF RESEARCH AND TEST REACTOR LICENSE RENEWAL APPLICATIONS

PURPOSE:

To provide the Commission with information regarding staff plans to improve the review of license renewal applications for research and test reactors (RTRs).

SUMMARY:

The NRC staff has explored several possible alternatives for the RTR license renewal process that would improve the efficiency of the process for both the NRC staff and the licensees while ensuring that the facilities would operate safely during extended periods of operation. The NRC staff has also considered process changes that could increase the effectiveness of reviews without changing the review scope. The NRC staff held a public meeting with stakeholders to gather feedback on the current process, ways it could be improved, and the options the staff was considering for improving the review process. The staff also evaluated causes for the current backlog of RTR license renewal applications under review, many of which are greater than 4 years old. Several issues have contributed to the large backlog, including U.S. Nuclear Regulatory Commission (NRC) RTR licensing staffing levels, emergent issues, limited licensee resources, existing license infrastructure, regulatory requirements, and the broad scope of the RTR license renewal process.

The staff has evaluated these causes and factored them into streamlining options for the renewal process. While the staff considers some of these options or alternatives, the staff intends to continue with the current review process for the review of RTR license renewal applications where the review has already commenced. The NRC staff will then use a process similar to a generic analysis approach where information that is applicable to common plant designs could be referenced by each new review. Recently approved renewed licenses will be used as reference for similar facilities with pending reviews as applicable. In the future, the

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NRC staff will work with stakeholders to develop a generic analysis approach that will be as universally applicable as possible for the most common plant designs. The NRC staff will continue to interact with stakeholders to explore additional potential enhancements to the RTR renewal protocol.

BACKGROUND:

On April 3, 2008, the Commission issued a staff requirements memorandum (SRM), entitled, "Briefing on State of NRC Technical Programs", that, in part, requested the staff to "examine the license renewal process for non-power reactors to identify and implement efficiencies that will streamline this process while ensuring that adequate protection of public health and safety are maintained."

The current license renewal process for an RTR is essentially the same as for initial licensing of the facility. In response to the SRM, the NRC staff has considered alternatives to the current review process that would narrow the scope of the review as well as process changes to streamline license renewal reviews.

DISCUSSION:

Status of Research and Test Reactor Renewal Applications and Contributors to Backlog

Currently, a large number of RTR renewal applications are under review, many of which are greater than 4 years old. The following four issues have contributed to the large backlog and are important to understand and factor into the steps the staff proposes for improvement of the renewal process.

(1) historic NRC staffing and emergent issues;

(2) limited licensee resources;

(3) poor existing license infrastructure;

(4) regulatory requirements and the broad scope of the license renewal process.

(1) Historic NRC Staffing and Emergent Issues

The staffing level for non-power reactor licensing has been discussed in SECY-05-0062 (SECY paper) dated April 13, 2005. The SECY paper noted that work was deferred on a number of license renewal applications because of other high priority work such as the security initiatives instituted after the terrorist attacks of September 11, 2001. Work on the security initiative continued into the current fiscal year significantly contributing to the current backlog. Another emergent issue that has limited the staffing available for license renewal reviews is the program to convert all high-enriched uranium (HEU) sites to low-enriched uranium (LEU).

Table 2 of the SECY paper provided an initiative plan for FYs 2005 - 2010 which included an estimate of the number of renewals that should be completed each fiscal year. The staff has not completed renewals at the rate estimated in the SECY paper because of several factors. First, the effort required to convert numerous sites from HEU to LEU was not figured into the

estimate. Second, the staffing levels for RTR licensing have been increased to the level recommended in the SECY paper, but not at the rate assumed in the paper. Finally, the SECY paper assumed the formation of a project-based license renewal team. Difficulties in filling the staffing needs delayed the formation of that team, but it is currently being constructed.

(2) Limited Licensee Resources

Many RTRs have limited staff and resources available for licensing. RTR staff available for licensing can range from as low as one part-time employee for some low power reactors up to four or five for higher power reactors. The RTR staff that perform the licensing function do so in addition to their normal organizational responsibilities, which often results in delays (particularly in responding to requests for additional information (RAIs)) in the license renewal process.

(3) Poor Existing License Infrastructure

The last time that many of the licenses in the current backlog came due for renewal was in the 1980s. Because of priorities within the NRC after the accident at Three Mile Island, the agency did not act on these applications, which created a backlog of applications. Consequently, these applications were reviewed with varying levels of depth. Also, NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors," which prescribes the content for RTR safety analysis reports (SARs) was issued in 1996, after the current renewal applicants were last licensed or renewed. None the less, the SARs that have been submitted with the RTR renewal applications often do not adhere to the guidance located in NUREG-1537. The SAR format, content guidance and staff review procedures before the issuance of NUREG-1537 were informal, which resulted in varying levels of completeness and consistency in reviews. For these reasons, the NRC staff has found that the SARs submitted with renewal applications are frequently out of date and, in some cases, contain errors in important areas such as the accident analysis.

(4) Regulatory requirements/broad scope of license renewal process

The other issues contributing to a lengthy review process are the requirements for the renewal. The NRC has developed numerous regulations and guidance since the current renewal applicants were originally licensed. Pertinent regulations for the review of RTR license renewal include Title 10, Part 20, "Standards for Protection Against Radiation," of the *Code of Federal Regulations* (10 CFR Part 20); 10 CFR 50.33, "Contents of Applications—General Information"; 10 CFR 50.34, "Contents of Construction Permit and Operating License Applications—Technical Information"; 10 CFR 50.36, "Technical Specifications"; 10 CFR 50.54, "Conditions of Licenses"; 10 CFR 50.75, "Reporting and Recordkeeping for Decommissioning Planning"; 10 CFR Part 73, "Physical Protection of Plants and Materials"; and 10 CFR Part 100, "Reactor Site Criteria" (for test reactors only). Although the regulatory requirements are not as prescriptive for RTRs as they are for power reactors, the NRC staff must still reach a determination that the licensee is in compliance with the regulatory requirements to issue a renewed license. The primary safety finding that the staff makes is that facility operation will comply with 10 CFR Part 20. As a result, the regulatory requirements for the content of an application for a renewed RTR license, and the associated NRC staff review, are essentially the same as those for an original license.

The renewal process in 10 CFR Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," which provides for a review scope focused on aging management, does not apply to nonpower reactors. This is primarily because power reactor facilities have regulatory requirements for maintaining current licensing-basis documentation that do not apply to nonpower reactor licensees. During the development of 10 CFR Part 54, the NRC made a deliberate decision not to apply 10 CFR Part 54 to RTRs.

The NRC staff has found that the scope and depth of the current reviews are driven primarily by the need to ensure that the SAR, technical specifications (TSs), and decommissioning funding assurance are up to date. Changes in the requirements of 10 CFR 50.36 and 50.75 that occurred since these facilities were last licensed or renewed are key factors in the review requirements for non-power reactor license renewals. 10 CFR 50.36(b) states in part that "The technical specifications will be derived from the analyses and evaluation included in the safety analysis report [SAR], and amendments thereto, submitted pursuant to 10 CFR 50.34." 10 CFR 50.36 also specifies criteria for which limiting conditions for operations must be established. In the process of reviewing the TSs, the NRC staff must ensure that the associated SAR analyses are up to date and correct. This has resulted in substantial interaction with the licensees to correct and update the SARs and to upgrade the TSs to meet the current regulatory requirements.

The guidance for financial assurance has been updated since the current renewal applicants were found to be in compliance with the financial assurance regulations. Therefore, the information in the renewal applications does not address the updated guidance adequately, and numerous RAIs are generated.

Considerations Given to Changes in the Renewal Process

The NRC staff has evaluated the potential to apply a more focused review process to the current backlog of RTR renewal applications. Consistent with the primary objective of the NRC, any process changes to the review of RTR license renewal applications must ensure that the reactors would be safely operated for the extended life of the license. Therefore, any changes to the renewal process must address how safe operation of the reactors is ensured for the extended life of the license. Also consistent with the NRC's commitment to openness, any streamlining of the license renewal process would have to ensure that the public has the opportunity for involvement.

Any streamlined process must consider the following eight areas addressed in the current renewal review process, either periodically during the license process or at the time of license renewal:

(1) as low as reasonably achievable (ALARA) program;

(2) security program and procedures;

(3) emergency plan;

(4) financial qualification;

(5) operator training and requalification program;

(6) identification of potential aging degradation;

(7) changes in design;

(8) TS compliance with 10 CFR 50.36.

Although the fleet of RTRs has had an extended history of safe operation and the U.S. Atomic Energy Commission and/or the NRC have previously reviewed and approved the licenses, the staff has repeatedly found issues when reviewing renewal applications (see Enclosure 2 for examples). The safety significance of these review findings varies, and can be difficult to quantify. However, all of these issues needed to be resolved to ensure the safe operation of the facilities at the time of license renewal. Reductions in the scope of review could lead to these issues remaining unresolved in the renewed license. Although these issues were not created during the license renewal process, they are items that the staff has had the opportunity to address under the current scope of review that an altered process may not afford.

It is also important to note that none of the RTR licenses have conducted a probabilistic risk assessment (PRA) for their facilities. Based on this, the staff can evaluate narrowing the scope of the license renewal review for RTRs based on engineering judgment, and not a quantitative assessment of the risk associated with a narrowed scope of review.

Stakeholder Engagement and Options for Streamlining

The NRC staff held a public meeting with members of the RTR licensed community to gather feedback on; the current process and ways it could be improved, and options the staff is considering. Through discussions with the regulated community and the NRC staff, several options for revising the license renewal process for RTRs have been evaluated. Through consideration of the discussions with the stakeholders and the staff, the following steps are being taken as a first step to streamlining the renewal process. For further details on the options considered by the staff refer to Enclosure 1.

Immediate Staff Actions

The increased staffing levels in the budgets for fiscal years 2008-2009 at the NRC and the creation of a dedicated team for renewals is, and will, aid in the backlog being steadily reduced. The use of a generic analysis approach where appropriate will streamline the renewal process for common plant designs.

The NRC has issued several renewed licenses in fiscal year 2008. The issued renewed licenses will be used as resources for other pending and planned reviews. For example, the NRC staff issued a renewed license to Oregon State University using the current rigorous review criteria. The analysis provided by Oregon State University and the subsequent NRC approval can now be used for other TRIGA facilities. Licensees that have outstanding RAIs, for example, can reference the Oregon State renewal where applicable. Additionally, in the public meeting previously mentioned, the staff at Oregon State offered the analytical tools that they developed as a resource to any licensee interested. Therefore, the Oregon State University renewed license will be used, where applicable, as a generic analysis approach (as described in Enclosure 1).

The use of a previously approved renewed license as a generic analysis approach can have limitations. For example, a design aspect for a facility that has already been approved may be unique to that facility and not applicable to other similar designs. Therefore, the NRC staff will work with the licensees to develop a generic analysis approach that will be as universally applicable as possible.

Long Term Actions

After the current back-log of renewals is completed, the NRC staff may consider working with the RTR licensees and the public beyond FY2012 to develop a rule governing the renewal process for RTRs. The staff may work with the RTR licensees to develop a basis for redefining the scope of the license renewal process (i.e. PRA). The rulemaking could potentially adopt the alternate safety review approach, the graded approach, or some other form that would meet the Atomic Energy Act minimal regulation requirement while ensuring the safe operation of the facilities during the extended licensing period.

COMMITMENTS:

The staff will continue to interact with the RTR community and the public to develop renewal protocol and will provide a progress report within one year of the date of this paper.

RESOURCES:

The staffing requirements for implementing the staff's plans have been included in the FY 2009 Presidents Budget (PB) and the FY 2010 Current Estimate (CE) (FY 2009: $975K and 17 FTE, and FY 2010: $915K and 19 FTE). Any efficiency, which results from process changes to license renewal, will be applied to reducing the backlog of existing projects. Cost estimates for FY2011 and FY2012 are expected to remain flat with budgeted resources for FY2010 ($915K and 19 FTE).

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

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Enclosures:
1. Detailed Description
2. Example Review Findings
3. Example Regulatory "Tree"

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OFC	NRR/DPR/PRTA/PM	NRR/DPR/PRTA/LA	OGC	NRR/DPR/PRTA/BC
NAME	RKuntz (KBrock for)	EBarnhill (RKuntz for)	SUttal NLO	KBrock
DATE	10/01/08	09/11/08	09/26/08	10/01/08
OFC	NRR/DPR	Tech Editor*	NRR	EDO
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DATE	10/09/08	09/12/08	10/16/08	10/24/08

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DETAILED DESCRIPTION OF RESEARCH AND TEST REACTOR LICENSE RENEWAL STREAMLINING OPTIONS THE STAFF HAS CONSIDERED

Alternate Safety Review Approach

One approach the Nuclear Regulatory Commission (NRC) staff has considered for streamlining the research and test reactor (RTR) license renewal process would be to adopt an alternate safety review. The basic premise of the alternate safety review is that the previously granted license was granted with due diligence and that the plants have operated safely during their previously licensed term. Therefore, the alternate safety review would not re-analyze those items that were approved when granting the previous license. The scope of the review would be all of the changes to the facility since it was last licensed including, but not limited to, physical modifications, and license modifications. The review would also ensure that the proposed renewed licenses meet the requirements of all changes to the regulations since the last license was issued.

The alternate safety review approach would not reanalyze those items the staff has previously reviewed and approved. Therefore, safe operation of the facility would be assured by; the review of the changes to the facility, compliance with the current regulations, the previous NRC analysis, and the inspection process.

This process would require the licensee to submit a summary of the changes to the facility since it was last licensed or renewed. The NRC staff would review the changes and verify the plant configuration during site visits.

Steps to Implement Alternate Safety Review Approach

The NRC staff would need to develop a rule to incorporate this approach into the Commission's regulations and develop format and content guidance documents for the licensee and a standard review plan for the NRC staff. The guidance document would include guidance for the licensee on information required to be submitted. The guidance for the staff would include instructions for the site audit, a time line of the relevant changes to the regulations, and what would be in the scope of the review. The updated guidance would be noticed for public comment prior to implementation.

Steps in the Alternate Safety Review Approach

The licensee would submit an application for renewal that would include a discussion of changes to the facility since it was last licensed. For those applications already on the docket, the licensee would amend those applications to include the changes to the facility. The staff would review the changes that the licensee submitted and conduct an on-site visit to review the current plant configuration. Additionally, the proposed license would be reviewed for compliance to any changes in the regulations since the issuance of the previous license.

The review of the application would be noticed in the Federal Register similar to the current process. The safety evaluation accompanying the approved license would explicitly state those areas that were reviewed.

Advantages of the Alternate Safety Review

The alternate safety review would save the staff and licensee effort on items that have been previously reviewed and approved by the NRC. The approach has similarities to that used for power reactors.

Disadvantages of the Alternate Safety Review

The approach is based on the premise that the existing license does not contain any deficiencies important to safety. As shown in the examples in Enclosure 2, the potential may exist for safety analysis reports (SARs) to contain errors that could be safety significant. There is no way to predict which applications would have issues brought to light by a traditional review. The staff would not pursue non-regulation based enhancements to the licensing basis (e.g., evaluating potential pool leakage to show safety significance) or updates to technical specifications (TSs). Licensees that have submitted renewal applications would be asked to amend the applications, which may involve more resources than finishing the application already on the docket. The public could raise questions or find errors in applications on the docket that would not be reviewed by the staff.

Graded Approach

Because of the variety of RTR designs and power levels the risks associated with the operation of an RTR can vary considerably. A potential means of streamlining the review would be to base the areas of review on the relative risk associated with the renewed license. Those facilities that present the least risk would be subject to a minimal review for renewal of the license. Those that present a moderate risk would receive a more rigorous review, and finally those facilities with the highest risk would require a complete review similar to what is currently accomplished for all licensees.

The graded approach would ensure safe operation of the facility by properly identifying the inherent risk associated with the various facilities and ensuring those risks are minimized.

The staff must develop the technical, regulatory and policy bases to support this option. If this option is imposed by regulation, then the bases must be covered in the rulemaking's statement of considerations. It may well be that this option cannot or should not be initiated until it has been incorporated into a regulation, or, at the very least, published for comment, since it is a change in a long standing process that will require amendment of the SRP and other guidance.

Steps to Implement Graded Approach

The first step to implement the graded approach would be to develop the guidelines for how to classify each reactor and the proper review for each classification. Once the guidelines are determined, guidance documents for each level of review must be developed for both the licensee and the staff. The guidance documents would then be noticed for public comment.

Steps in the Graded Approach

The staff would apply the appropriate review criterion for the reactor. The renewal applications would be noticed in the Federal Register prior to issuance.

Advantages of the Graded Approach

The major advantage to the graded approach is that it would adhere to the regulatory requirement of minimal regulation for non-power reactors by only reviewing items that are necessary to ensure safe operation of the facility for the extended life of the license. The graded approach would save the staff and licensee effort on items not important to safety.

Disadvantages of the Graded Approach

As with any narrowing of the scope of review for license renewal, the potential exists for licenses to be issued that contain errors. However, proper adoption of the graded approach would result in any errors that remain in the license to be items not important to safety.

A potential issue with adopting the graded approach would be determining the risk of extending the license because probabilistic risk assessments (PRAs) have not been accomplished for any of the non power reactors. The staff would need to establish that areas not subject to review are not significant to safety. Therefore, adopting the graded approach could take considerable time and effort for the staff.

Another disadvantage of the graded approach is that its implementation could be lengthy as it may require rulemaking.

<u>Generic Analysis Approach</u>

The generic analysis approach would be similar to the NRC's Topical Report process. The NRC would review and approve a generic design for a reactor design (e.g. Aerojet General Nucleonics design). The licensees with a similar design would confirm that they are bounded by the generic analysis (for those portions of the license where the generic analysis is bounding). The NRC has had some generic accident analyses performed in the past (e.g., NUREG/CR-2198, "Fuel Temperatures in an Argonaut Reactor Core Following a Hypothetical Design Basis Accident").

Advantages of the Generic Analysis Approach

The advantage of the generic analysis is that once the initial work is completed to develop the guidance, it would save considerable time for both the licensee and staff on items that are similar for several licensees. The licensees would save time by referring to the generic analysis where applicable thereby streamlining the application process. The NRC staff will save time by relying on the previously approved generic analysis where applicable and not reanalyzing those items for each licensee. The generic analysis would also save effort for both the licensees and the NRC staff by eliminating some requests for additional information (RAIs).

The licensed facilities that have provided feedback on the renewal process have stated that generic analysis for the various designs would be very beneficial and could be relatively easy to develop.

Disadvantages of the Generic Analysis Approach

The disadvantage of the generic analysis approach is the initial burden of developing the generic analysis and the variety of RTR designs. The RTR inventory has several designs that have limited application. For these designs a generic analysis would likely not be worth the initial investment. Also, the RTR licensees may not have the expendable budget to develop the necessary application.

Generic Siting Analysis

A portion of the application submitted by the licensee is information related to the site of the facility. The license renewal application contains, for example, local climatology and seismology. Currently, many licensees have to spend considerable time gathering the necessary data. The NRC staff has considered developing a generic communication that contains this information for each of the sites which the licensees could then reference in their submittals. The licensee would still make the case to the NRC that the site continues to be acceptable based on the data. The NRC would then periodically update the generic communication for future use.

Advantages of the Generic Siting Analysis

The generic siting analysis would ease the burden on the licensee when applying for license renewal. The generic siting analysis would eliminate requests for information related to the site of the facility.

Disadvantages of the Generic Siting Analysis

The generic siting analysis would expend NRC resources both for the initial development of the generic communication and with subsequent revisions.

Also, the NRC funding to develop the generic siting analysis may run afoul of administrative regulations and appropriations law prohibitions that prevent the agency from funding or undertaking certain activities that are required to be performed by licensees. The answer to that question will require additional information and research. However, if the siting surveys are for the purpose of meeting the agency's own official needs then such funded effort would be permissible.

Extended License Term

10 CFR 50.51(a) states that "[e]ach license will be issued for a fixed period of time to be specified in the license but in no case to exceed 40 years from date of issuance." Consequently, no renewed license period can be greater than 40 years under the current regulatory requirements. However, Section 104 of the Atomic Energy Act does not establish a term limit for RTR licenses. Therefore, the Commission may either grant an exemption to the

regulations contained in 10 CFR 50.51(a), or establish a rule that would extend the license term for RTRs.

License terms are generally based upon the life expectancy of the facility and its components. In order to permit an extended term (including possibly an indefinite term), the staff would have to explain why it is appropriate and, more importantly, demonstrate that there are no aging concerns.

Environmental conditions such as temperature, pressure and radiation levels in most RTRs are not significant. With surveillance, maintenance and repair, RTRs can have indefinite lives.

For a facility to be eligible for an extended license term, the staff would complete a detailed renewal with a licensing basis reviewed against NUREG-1537. To maintain the licensing basis over time, the staff would propose a license condition or regulation that requires licensees to revise their SARs on a periodic basis such as every 2 years. The inspection program would be enhanced to place additional focus on surveillance, maintenance and repair, and changes to the facility made under 10 CFR 50.59. The licensee would still be required to adhere to changes in the regulations.

In addition, the public would still have the opportunity to raise concerns about the licensee. A member of the public could file a request under 10 CFR 2.206 to institute a proceeding under 10 CFR 2.202 to modify, suspend, or revoke a license or for any other action as may be proper. The staff could also offer the opportunity to the public to request a hearing on continuation of the license on some periodic basis such as every 20 years.

An extended license term would assure safe operation of the facilities in the exact same way as a license with a shorter duration. The requirement to periodically update the SAR would allow for the more even expenditure of licensee resources than updating documentation every 20 years. In focusing on the licensing basis periodically, licensees will have a more up to date understanding of their facilities. Public confidence is maintained by the enhanced inspection program and retaining periodic formal opportunity for hearing.

Advantages of an Extended License Term

An extended license term would streamline the license renewal process by having fewer license renewals required.

Disadvantages of an Extended License Term

The license renewal process ensures public confidence by reaffirming facility maintenance, the licensing basis and accident analyses, emergency planning, and facility and material security and safeguards. The extended period of the license, with fewer opportunities for public involvement, would be detrimental to ensuring public confidence.

Other Staff Initiatives

Along with changes to the requirements for the renewal, the NRC staff has considered process changes that could increase the effectiveness of reviews and possibly decrease the burden on the licensee.

Regulatory Trees

The NRC staff has considered development of regulatory “trees” to help guide the NRC staff and contractors reviewing renewal applications. The regulatory “trees” would focus the staff on items required to make a regulatory finding of acceptability. Each of the regulatory requirements that must be satisfied for the license to be renewed would be presented in a schematic with various ways to meet the requirements. The staff would then canvas the application to ensure that the licensee properly addressed each of the regulatory requirements. The regulatory “trees” would focus the review, and potentially eliminate RAIs that are not necessary to make a regulatory finding of acceptability on the renewal application. For an example of the Regulatory Trees please see Enclosure 3.

EXAMPLE RESEARCH AND TEST REACTOR LICENSE RENEWAL AND FUEL CONVERSION REVIEW FINDINGS

Some examples of the more significant items the staff has discovered during the review of Research and Test Reactor renewal and conversion applications are (issues with conversion are included as examples because they are items that could potentially remain in a renewed license if a narrowed scope of review were implemented):

- A safety analysis report (SAR) contained an accident analysis that assumed a maximum coolant temperature at the beginning of a maximum hypothetical accident, yet the technical specifications (TSs) did not contain an operating restriction to ensure that the coolant temperature would not exceed the analytical limit.

- An SAR contained a thermal-hydraulic analysis that was not based on limits for reactor power or coolant temperature. The safety margins for operation of the reactor were not known.

- An SAR did not contain calculations showing that the limiting safety system setting (LSSS) protected the safety limit. The response to a staff request for additional information (RAIs) showed that the proposed LSSS did not protect the safety limit under all allowed core configurations. Changes to the TSs were needed.

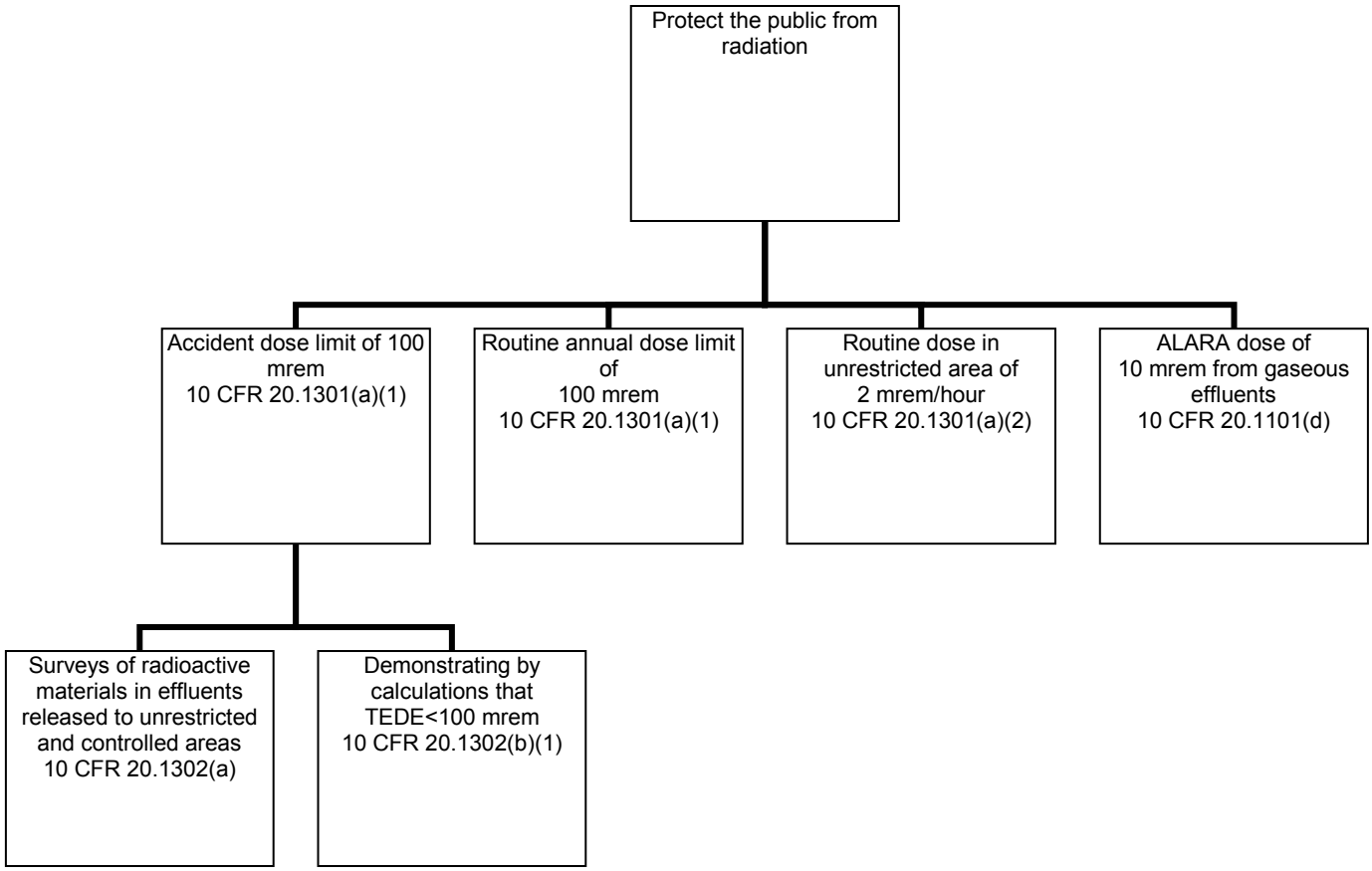
- An SAR contained accident analysis with unrealistic assumptions that resulted in large postulated doses to members of the public. Through the RAI process, the analysis was made more realistic and stated doses were reduced.

- The proposed TSs for one facility would allow operation up to 500 kW in natural circulation. However, the SAR only evaluated the use of natural circulation up to 10 kW.

- The accident analysis provided in one SAR demonstrated a dose to the member of the public in excess of the 10 CFR Part 20 limits with no information required by 10 CFR Part 20 to approve an alternate dose limit.

- The accident analysis in one SAR discusses in general terms that earthquakes in the area are rare and not likely to damage the reactor, but provided no actual accident analysis.

- The review of the SAR for one site identified a potential direct release path to the environment. The site in question has a single heat exchanger used to remove heat from the primary coolant. The water used to cool the primary coolant is released to the atmosphere. A failure of the heat exchanger could potentially release primary water directly into the environment.

Potential reductions in the scope of review could lead to these issues remaining unresolved in the renewed license. While these issues were not created during the license renewal process, they are items that the staff has had the opportunity to address under the current scope of review that a streamlined process may not afford.

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