Report of the Combined License Review Task Force

/RA/

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Executive Summary

In November 2006, Nuclear Regulatory Commission Chairman Dale E. Klein and Commissioner Jeffrey S. Merrifield agreed that Commissioner Merrifield would lead a task force to explore further efficiencies in the NRC's review of new reactor license applications pursuant to 10 CFR Part 52. The charter of the task force was to evaluate the NRC's environmental, technical, and adjudicatory review processes associated with new reactors and provide options and recommendations for process improvements while maintaining a paramount focus on safety.

The NRC staff currently estimates that it will take approximately 42 months to complete the review of a combined license application. This schedule includes 30 months for technical and environmental reviews resulting in issuance of a final safety evaluation report and a final environmental impact statement. The staff has allotted the remaining 12 months for adjudicatory proceedings, which include the mandatory hearings. The task force reviewed the NRC's environmental, technical, and adjudicatory review processes and solicited process improvement recommendations, lessons learned, and best practices from a variety of stakeholders. Based on these efforts, the task force identified process improvements that could result in efficiencies in the NRC's review of new reactor license applications while preserving its overriding focus on safety.

The task force developed specific recommendations for process improvements and determined that implementation of these recommendations could result in an overall reduction of **approximately 6 to 15 months** in the schedule for review of a combined license application referencing a certified design. These recommendations are as follows:

(1) The task force recommends that the Commission revise 10 CFR 2.104 to reflect a policy that a contested hearing for a combined license application fulfills the requirement in section 189a.(1)(A) of the Atomic Energy Act that the Commission "shall hold a hearing ... on each application for a construction permit ...." Under the recommended policy, there would be a hearing on *un*contested issues only if there were no hearing on contested issues; and any hearing on uncontested issues would be conducted by the Commission itself.

(2) The staff should expand the scope and duration of the combined license application acceptance review to include completeness and technical sufficiency reviews that will better inform and improve the staff's licensing review effort, the Advisory Committee on Reactor Safeguards review, and allow for development of unique license review schedules for each combined license application.

(3) The staff should establish a 45-day public comment period for the Environmental Scoping Process and the draft Environmental Impact Statement.

(4) The staff should seek additional opportunities to use Environmental Impact Statements completed by other governmental agencies when appropriate for its combined license review activities.

(5) The staff should create an Environmental Review Working Group comprised of senior NRC staff. This group should conduct public workshops and solicit input from industry experts and external stakeholders to evaluate environmental review activities and processes for further efficiencies.

(6) The staff should maximize its use of electronic document management to eliminate the processing time for bound reports from the critical path on the schedule.

In addition, the task force identified some recommendations that should result in review efficiencies for license applications submitted after the initial wave of applications expected in calendar years 2007 and 2008:

(1) The task force recommends that the Commission request legislative authority from Congress to eliminate the statutory requirement for a mandatory hearing (i.e., a hearing on uncontested issues).

(2) The task force recommends that the Commission consider rulemaking to resolve issues that are generic to combined license applicants. For example, the generic issues could include such topics as non-proliferation risks of nuclear power, the need for power, long term storage of spent fuel, and reprocessing. This would allow resolution of these issues in a public rulemaking process rather than in individual contested proceedings.

The task force also identified other areas of the combined license review process that warrant further consideration for review as these areas may potentially result in additional schedule or resource savings. In additon, the task force identified specific assumptions and elements of the NRC's combined license review process that are considered keys to success. Finally, the task force identified challenges and uncertainties for new reactor licensing that, if left unresolved, may impact full realization of the efficiencies resulting from implementation of the task force's recommendations.

1. Background

In November 2006, Nuclear Regulatory Commission Chairman Dale E. Klein and Commissioner Jeffrey S. Merrifield agreed that Commissioner Merrifield would lead a task force to explore further efficiencies in the NRC's review of new reactor license applications pursuant to 10 CFR Part 52. The charter of the task force (see Enclosure 1) was to evaluate the NRC's environmental, technical, and adjudicatory review processes associated with the licensing of new reactors and to provide options and recommendations for process improvements while maintaining a paramount focus on safety.

The NRC staff currently estimates that it will take approximately 42 months to complete the review of a combined license application that references a certified design. This schedule includes 30 months for technical and environmental reviews resulting in issuance of a final safety evaluation report and a final environmental impact statement. The staff has allotted the remaining 12 months for adjudicatory proceedings, which include the mandatory hearings. The task force reviewed the NRC's technical, environmental, and adjudicatory review processes and solicited process improvement recommendations, lessons learned, and best practices from a variety of stakeholders. Based on these efforts, the task force developed specific recommendations to improve the combined license review process.

2. Method

The task force reviewed the combined license (COL) process and changes to this process that may result from the final Part 52 rulemaking. In addition, the task force reviewed the New Reactor Licensing Program Plan developed by the Office of New Reactors for staff review of new reactor license applications. The task force met with and held discussions with a variety of stakeholders. A summary of the combined license review process and task force considerations of the elements of this review process is provided in Enclosure 2.

3. Findings

The task force organized its results into the following five categories:

1) Recommended process improvements - these include specific recommendations for improvements of the combined license review process by rescheduling process steps, eliminating process steps, or revising process steps. The task force provided an estimate of the schedule savings that the staff could achieve from implementation of these recommendations. For some recommendations, an estimate of schedule savings was not quantifiable at this time. In addition, the task force included recommendations that resulted in resource savings without any expected commensurate schedule improvements. The specific recommendations are discussed in Section 4.

2) Keys to success - these include activities already included by the NRC staff in the combined license review process and plans, or assumptions made in developing the review process that are critical to its success and, therefore, must be maintained or implemented. The keys to success are discussed in Enclosure 3.

3) Areas needing further consideration - these include areas of the combined license review process for which task force discussions and efforts did not result in more fully developed recommendations; however, the task force believes further investigation and development may result in the identification of additional process improvements or efficiencies. These areas are discussed in Enclosure 4.

4) Challenges and uncertainties - the task force also identified challenges and uncertainties associated with the combined license review process for new reactor applications. These challenges and uncertainties are discussed in Enclosure 5.

5) Suggestions considered but not recommended - these include suggestions that the task force considered but were found to be impractical or without significant benefit. These suggestions are discussed in Enclosure 6.

4. Recommended Process Improvements

The task force proposes the following recommendations to achieve greater efficiency and effectiveness in the safety, environmental, and adjudicatory review processes associated with a combined license review. Enclosure 2 provides additional background information considered by the task force in association with these combined license review processes. The task force also concluded that the recommended process improvements will not adversely affect the staff's ability, during its review of combined license applications, to maintain its overriding focus on safety.

The task force believes that implementation of the following recommendations will result in savings in the review schedules for combined license applications beginning with the initial wave of combined license applications that are expected in calendar years 2007 and 2008:

1) Commission Policy on Combined License Hearings

The task force recommends 10 CFR 2.104 be revised to reflect a policy that a hearing on contested issues in a combined license proceeding fulfills the requirement in section 189a.(1)(A) of the Atomic Energy Act that the Commission "shall hold a hearing ... on each application for a construction permit ...." Under the recommended policy, a hearing on *un*contested issues would be held only if there were no hearing on contested issues; and any hearing on *un*contested issues would be conducted by the Commission itself. Section 2.104 in its current form, and as implemented in agency adjudications, presumes that there will always be a hearing on uncontested issues, whether a hearing on contested issues is held or not. Section 2.104(b)(2)

and (3) provide that the ultimate adjudicatory determinations are made in the uncontested portion of the hearing.[1] While Part 52 makes no distinction between "construction permit" and "operating license" issues, the mandatory hearing requirement applies only to "construction permit" issues. However, arguably, a hearing on contested issues that include either "construction permit", "operating license" issues, or both, would satisfy the statutory requirement for a hearing. If the Commission decides not to adopt the position that a hearing on contested issues fulfills the mandatory hearing requirements, the task force would still recommend that the Commission should conduct the hearings on uncontested issues, and 10 CFR 2.104 should be revised to set out findings more appropriate for a hearing in which the presiding officer is not being called upon to adjudicate between opposing positions.

The task force has developed for the Commission's consideration a proposed process and agenda for a Commission hearing on uncontested issues (see Attachment). The attachment assumes section 2.104 in its present form. In preparation for such a hearing, the NRC staff would be directed to prepare a SECY paper and to attach to it the final safety evaluation report, final environmental impact statement, and the pertinent letter from the Advisory Committee on Reactor Safeguards (ACRS). In addition, as part of the SECY paper, the staff would provide the information necessary for the Commission to make the findings under 10 CFR 2.104. Also, precisely because these hearings are uncontested, presenters would be limited to the applicant, the NRC staff, and perhaps the Chairman of the ACRS. The Commission would devote a full day to such a hearing. In any case, the Commission should avoid the temptation to establish a special office or assign special personnel to assist the Commission with the conduct of the hearing. As the task force envisions the hearing, it is best assigned to the Commissioners themselves rather than the Atomic Safety and Licensing Board.

Contrary to the new reactor licensing program plan's assumption that the adjudicatory phase of a COL proceeding takes place entirely after issuance of the staff's final safety evaluation report and final environmental impact statement, some adjudicatory activities (e.g., motion practice on contested issues) will likely occur in parallel with the NRC staff's safety and environmental reviews. The task force believes that experience with hearings in Part 50 licensing proceedings shows that many contested issues in a combined license proceeding can be resolved during finalization of the staff's safety evaluation report and environmental impact statement. Therefore, the task force believes that the 12 months allotted for adjudication after issuance of the final safety evaluation report and final environmental impact statement could be reduced to 6 to 9 months (i.e., savings of approximately **3 to 6 months**) in the case of hearings on contested issues (assuming that there is no hearing on uncontested issues). Where there is instead a hearing on uncontested issues, the schedule savings from having the Commission conduct the hearing is approximately **8 to 10 months**.

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[1] The current version of the draft SRM on Part 52 directs the staff to revise 10 CFR 2.104 to ensure the Commission has maximum flexibility in conduct of mandatory hearings.

2) Extend Duration of Acceptance Review and Develop Application-Specific Review Plan

a. The staff should extend the duration of the application acceptance review from the current 30 days to 60 days, as discussed in 10 CFR 2.101(a)(2), for reference-COL[2] applications (and, perhaps, for design certification applications). In addition to reviewing applications for completeness, the staff should expand its review process to assess applications for technical sufficiency. This expanded review should focus on identifying technical issues that, based on the information contained in the application, would most likely result in the staff having to perform a more in-depth review. For example, the staff may need a more in-depth review to assess the acceptability of design variations from the standard review plan, compatibility of a referenced certified design with site-specific parameters and characteristics, new and different engineering analysis methods for demonstrating regulatory compliance, and the use of new technologies to meet safety performance parameters.

b. For COL applications referencing a certified design, the staff should confirm that the finality attained through design certification is appropriately reflected in the review scope that the staff assumes when it develops the COL review schedules. The scheduled tasks and their task durations should accurately reflect this finality (e.g., reduction in the scope of review).

The outcomes of the expanded acceptance review should result in a net schedule savings of approximately **2 - 4 months** by:

- improving the basis for accepting the application or deferring the start of the review,
- providing early interactions with the applicant to discuss review results and make timely requests for supplemental technical information,
- reduce the need for requests for additional information because a high quality application will more likely be docketed,
- development of an application-specific review plan and schedule, and
- providing early interactions with the ACRS to discuss the application-specific review plan and the key technical areas the staff intends to focus on during the review (e.g., new technologies, new analysis methods, unique site-specific conditions, need for staff confirmatory analyses, etc.)

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[2]The term "reference-COL" refers to the COL application referencing a certified design that will be used as a reference for all subsequent COL applications referencing the same certified design. Using the design-centered-review approach (DCRA), staff decisions made on the "reference COL" would apply to all "subsequent COLs". Additional information on DCRA is provided in SECY-06-0019, dated January 31, 2006.

If the Commission chooses to implement this recommendation, the task force recommends the additional following actions:

i) To assess the necessary scope and depth of its review, the staff should consider safety significance, risk insights, plant operating experience, and staff experience with the engineering and design of similar structures, systems, and components at operating reactors, in development of the application-specific review plan. For example, the scope and depth of review for an intake cooling water system would likely be more rigorous than for a potable water system.

ii) The staff should engage the ACRS to further identify and clarify how the early input from this acceptance review can refine and maximize the efficiency of the ACRS review. In addition, early interaction between the staff and ACRS could better inform ACRS review schedules and could help focus the ACRS review on a reduced volume of information containing the pertinent safety issues.

3) Establish a 45-day Public Comment Period for the Environmental Scoping Process and the Draft Environmental Impact Statement

The task force recommends that the staff establish the public comment period for environmental scoping at 45 calendar days. Even though a public comment period of 60 days appears to be consistent with recent NRC practices for complex projects and the practices of some agencies, the task force believes that a 45-day public comment period will provide a reasonable opportunity for external stakeholders to provide input to the NRC's environmental scoping process. In addition, this comment period is consistent with guidelines from the Council on Environmental Quality. The task force believes that the schedule savings from implementation of this recommendation is approximately **2 weeks**. While the task force envisions these schedule savings to apply to the review schedule for subsequent COLs[3] (when the schedule for the environmental review exceeds the technical review), implementation is recommended for all COL reviews.

The task force also recommends that the staff reduce the public comment period for the draft environmental impact statement from the planned 75 calendar days to 45 calendar days. While the draft environmental impact statements are typically large documents and comment period extension requests typically come from other governmental authorities with which the NRC must interface, the task force believes, based on NRC and other agency experience, that 45 calendar days provides a reasonable opportunity for public comment. In addition, because NRC's environmental reviews will rely heavily on contractor assistance, extensions of public comment periods, may result in the unavailability of these contractor resources. Also, the 45-day public comment period is consistent with guidelines from the Council on Environmental

[3]The term "subsequent COL" refers to a COL application referencing certified design that is submitted after a "reference COL" referencing the same certified design. See also footnote 2.

Quality. The task force believes that the schedule savings from implementation of this recommendation is approximately **4 weeks**. While the task force envisions these schedule savings to apply to the review schedule for subsequent COLs (when the schedule for the environmental review exceeds the technical review), implementation is recommended for all COL reviews.

If the Commission chooses to implement this recommendation, the task force also recommends that the staff, together with consultation by the Office of General Counsel, develop appropriate criteria and a threshold for granting an extension to the public comment period.

4) Use of other Environmental Impact Statements

The task force recommends that the staff seek additional opportunities to support its environmental review efforts by "incorporating by reference" the applicable portions of environmental reviews or "tiering off" National Environmental Policy Act (NEPA) reviews performed by other governmental agencies. This may require that the staff create additional Memorandums of Understanding (MOUs) with other agencies. The task force recommends that the staff pursue additional MOUs, as necessary. The task force believes that by using environmental impact statements completed by other agencies, the NRC can achieve some additional process efficiencies. However, an estimate of process efficiencies that could be realized is not quantifiable at this time as these efficiencies will likely vary on a COL application-specific basis and on the timing of these other agency efforts. For example, for COL license application reviews, the NRC can tier off its own environmental impact statements performed for existing co-located sites/plants and for early site permits.

5) Establish Environmental Review Working Group

The task force recommends that the staff create an Environmental Review Working Group comprised of senior NRC staff. This group should conduct public workshops and solicit input from industry experts and external stakeholders to evaluate environmental review activities and processes for further efficiencies. To help identify additional opportunities for process improvements, the task force recommends that the Environmental Review Working Group apply appropriate techniques from Lean Six Sigma to the evaluation of the NRC's environmental review process. Since environmental reviews for three early site permit applications have been completed and a fourth application is currently under review, the task force believes that suitable data from these reviews could be used as input to the Lean Six Sigma evaluation. In addition, the task force believes that efficiencies for the entire environmental scoping phase can be achieved through the cumulative effects of minor efficiency improvements in areas such as scoping comment resolution and processing, scoping summary report preparation, consistent use of templates for preparation of requests for additional information, and staff adoption of a philosophy more consistent with "reasonable assurance" rather than "unassailability." With the experience gained from completing the early site permit reviews, the staff may be able to identify additional areas within the environmental scoping phase from which additional minor efficiency

improvements may be found. The Commission may also want to consider establishing goals and stretch-goals (e.g., 21 months and 18 months, respectively) for completing environmental reviews. The task force found in previously successful NRC licensing reviews there was a benefit from having the Commission establish project goals in terms of providing priorities and project focus. In conjunction with this experience, the task force also recognized the need, in some cases, for external stimulus in effectuating organizational change within a highly specialized organization.

6) Use of Electronic Document Management

The current licensing program plan includes significant schedule time for publishing documents such as the safety evaluation report with open items, draft environmental impact statement, safety evaluation report supplement to close open items, final safety evaluation report, and final environmental impact statement. The task force recommends that the schedule reflect completion of these activities when the staff has made these documents publicly available on the NRC's website or via the Agencywide Documents Access and Management System (ADAMS) instead of waiting for the publication of NUREGs. The task force believes that publication of NUREGs could proceed outside the critical path schedule since the staff will have already made the information publicly available. The task force believes that cumulative schedule savings of **2 - 4 weeks** could result from implementation of this recommendation.

The task force also proposes the following additional recommendations and believes that implementation of these recommendations should result in review efficiencies for combined license applications that are submitted after the initial wave of applications that are expected in calendar years 2007 and 2008:

1) *Elimination of Mandatory Hearing Requirement*

The task force recommends that the Commission request legislative authority from Congress to eliminate the statutory requirement for a mandatory hearing (i.e., a hearing on uncontested issues) from Section 189a. of the Atomic Energy Act. At the time that the requirement for a mandatory hearing was enacted - in the early days of nuclear regulation (late 1950's) - the requirement was an important procedural device for ensuring openness and for increasing public confidence. The goals of the mandatory hearing requirement are currently being met in a variety of other ways under a variety of statutes that were not in existence when the requirement was enacted. These include the Freedom of Information Act, the Federal Advisory Committee Act, the Government in the Sunshine Act, and the elaborate public process under the National Environmental Policy Act. Perhaps most important, the NRC does not have the promotional responsibilities the Atomic Energy Commission had when the mandatory hearing requirement was enacted.

2) *Rulemaking to Resolve Generic Issues for Combined Licenses*

The task force recommends that the Commission consider rulemaking to resolve issues that are generic to combined license applicants. For example, the generic issues could include such topics as non-proliferation risks of nuclear power, the need for power, long term storage of spent fuel, reprocessing, etc. This would allow the Commission to decide generic issues for combined license application with finality using its public notice and comment rulemaking process instead of having such issues examined as part of individual contested licensing hearings.

5. Summary of Recommended Process Improvements

The following table provides a summary of the task force's specific recommendations to improve the COL licensing review process. The recommendations are presented in the order in which they are discussed above. In addition, for each recommendation, the following elements of the proposed recommendation have been provided or discussed:

Potential Efficiencies/Improvements

The task force has estimated the potential savings or efficiencies in terms of schedule time, where possible. The task force did not attempt to identify a specific point in the schedule for the activity where these savings could be realized. In addition, the task force identified process improvements that could result in potential reductions in staff resources though they may not reduce the schedule time.

Implementation Mechanisms

The task force identified the proper and appropriate mechanisms to implement its recommendations. Mechanisms considered were rulemakings, Commission orders or policy, regulatory guidance, staff review guidance, or staff procedures.

Application Beneficiary

The task force also identified the COL applicant that it believed would benefit from implementation of these specific recommendations (i.e., Reference-COLs, Subsequent-COLs, or both). In many cases, the task force believed that the immediate benefits from implementing these recommendations could be realized by the Reference-COLs (R-COLs) for each design-center (see Enclosure 2 for discussion on design-centers). However, the task force also believed that the benefits to each of the Subsequent-COLs (S-COLs) within each design center would increasingly accrue with greater staff experience in licensing reviews until they reached a period of optimization. The task force did not attempt to identify when the staff could achieve optimization for each design center.

SUMMARY OF TASK FORCE RECOMMENDATIONS				
No.	Specific Recommendations	Potential Efficiencies/ Improvements	Implementation Mechanisms	Application Beneficiary
1	Revise Commission policy on combined license hearings	Schedule savings of approx. 8 - 10 months if a hearing on contested issues is not held; schedule savings of approx. 3 - 6 months if a hearing on contested issues is held (and a hearing on uncontested issues is not held) Resource savings - staff & ASLBP	Revision of 10 CFR 2.104	R-COLs S-COLs
2	Extend and expand COL application acceptance review to 60 days to assess completeness and technical sufficiency	Schedule savings of approx. 2 - 4 months (net) for R-COL Resource savings	None (allowed per 10 CFR 2.104, however future rule change recommended) Staff review guidance	R-COLs
3	Establish 45-day public comment period for the environmental scoping process and the draft environmental impact statement (EIS)	Schedule savings of approx. 2 weeks for the environment scoping process (approx. 4 weeks for the draft EIS)	FRN	S-COLs
4	Use of other EISs where appropriate	Resource savings only	additional MOUs may be needed	R-COLs S-COLs
5	Establish Environmental Review Working Group	undefined	None	R-COLs S-COLs
6	Use of electronic document management	Schedule savings of approx. 2 - 4 weeks	None	R-COLs S-COLs

Attachment
POSSIBLE AGENDA FOR COMMISSION-CONDUCTED HEARING
ON UNCONTESTED ISSUES IN A COMBINED LICENSE PROCEEDING
(Report of the Combined License Review Task Force)

The possible process set out below is drawn from three main sources: Commission practice in meetings in the early 2000s on staff proposals to issue renewed licenses, the recent Commission meeting of January 10, 2007 on the restart of Browns Ferry Unit 1, and past practice in hearings on uncontested issues. The process described below presumes that the requirements of 10 CFR 2.104, especially subsections (b)(2) and (3) (on the findings that must be made in uncontested proceedings), remain in place. However, a simplification of those requirements, which the task force recommends, would also simply the process, in part by allowing for a Commission decision that took the form of a short SRM, rather than a document that made the specific findings required by the current text of Section 2.104.

Before the hearing:

Notice: Notice of the hearing would be published in the Federal Register, as is done now for uncontested proceedings (see, e.g., 71 Fed. Reg. 59135, Oct. 6, 2006).

Documents: Two weeks before the hearing, the staff would send the Commission a SECY paper that addressed the findings required by 10 CFR 2.104(b) and attach or otherwise make available the following documents:

The Combined License application
The Final Safety Evaluation Report
The Final Environmental Impact Statement
The pertinent letter from the Advisory Committee on Reactor Safeguards
The proposed license

The Hearing:

Opening Remarks: The Chairman would call the hearing to order, describe the nature of the proceeding, the statutory basis for the proceeding, whether there had been contested proceedings, what findings the Commission would need to make prior to authorizing issuance of the license, what the general order of the hearing would be, and when a Commission decision might be expected.

Testimony: Presenters/witnesses would be sworn in. The applicant's presentation would come first. The Commissioners would ask questions of the applicant's witness before hearing from the staff. The applicant's presentation and the Commissioners' questions to the applicant might together occupy the morning of a one-day hearing. The staff would make its presentations in the afternoon. Another round of questions would follow the staff's presentation.

After the Hearing:

The Commission decision after the meeting might take the form of a CLI rather than an SRM. In either case, the decision, if favorable to the applicant, would make the findings required by 2.104(b), list the record documents on which the Commission relied, and authorize the Director of the Office of New Reactors to issue the combined license.

Enclosure 1
TASK FORCE CHARTER (2 pages)
(Report of the Combined License Review Task Force)

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

CHAIRMAN

November 20, 2006

MEMORANDUM TO: Luis A. Reyes
Executive Director for Operations

Karen D. Cyr
General Counsel

FROM: Dale E. Klein

SUBJECT: TASK FORCE FOR IMPROVING THE REACTOR LICENSING REVIEW PROCESS

To enhance NRC's environmental, technical, and adjudicatory reviews of new reactor applications, and after discussions with my fellow Commissioners, I have asked Commissioner Merrifield to lead a task force to explore further efficiencies that will maintain a paramount focus on safety, while removing unnecessary impediments to the review process. He has agreed to lead this effort. Please give him your full cooperation and support.

Attached is the charter for the task force. I have asked Commissioner Merrifield to provide me with options and recommendations by March 15, 2007 to further enhance the effectiveness and efficiency of new reactor application reviews.

Attachment:
As stated

cc: Commissioner McGaffigan
Commissioner Merrifield
Commissioner Jaczko
Commissioner Lyons

Task Force for Improving the Reactor Licensing Review Process

CHARTER: Effective and Efficient Reviews of New Reactor Applications

GOAL: Improve Effectiveness and Efficiency of New Reactor License Application Reviews

PURPOSE: Develop Options and Recommendations to Enhance Further the Effectiveness and Efficiency of New Reactor Application Reviews

PROJECT OVERVIEW:

a) Review current environmental, technical, and legal review processes for license applications

b) Determine where efficiencies can be realized in conducting these reviews while maintaining safety

c) Recommend policy and legislative changes for increasing the efficiency of new reactor licensing reviews

COMPLETION DATE:

March 15, 2007

TASK FORCE COMPOSITION:

The team will be assembled under the oversight of Commissioner Merrifield in consultation with the EDO and OGC.

Enclosure 2
DESCRIPTION OF COMBINED LICENSE REVIEW PROCESS
(Report of the Combined License Review Task Force)

Background

Due to projected growth in demand for electrical power, utilities have increasingly looked to nuclear power as a viable means of power generation to meet these needs. Favorable provisions provided in the Energy Policy Act of 2005 have helped to attract interest in new nuclear power plants and to accelerate the momentum of the nuclear power renaissance. As a result, an increasing number of potential applicants have communicated their plans to the NRC, via letters of intent, to submit applications for early site permits, design certifications, and combined licenses. The number of announced applications represents an enormous workload for the NRC. From the graphic illustration of this workload provided in Figure 1, it is clear that the efforts of the staff and the task force to identify efficiencies and recommend improvements in the license review process for new nuclear power plants are timely.

To prepare for the licensing of future nuclear power plants, the NRC originally developed, in 1989, a new streamlined licensing process under 10 CFR Part 52. Since that time, revisions have been proposed to further clarify and streamline Part 52. Those revisions are currently in the final rulemaking phase. The approach to licensing under Part 52 is based on early resolution of issues, standardization, and predictability. Part 52 includes three subparts: Subpart A for obtaining early site permits for suitability of construction and operation of a nuclear plant; Subpart B for certifying new nuclear power plant designs; and, Subpart C for applications for combined licenses for nuclear power plants. Under Part 52, the NRC has, to date, certified four standard plant designs (i.e., GE's Advanced Boiling Water Reactor (ABWR), CE's System 80+, and Westinghouse's Advanced Passive plant designs AP600, and AP1000). In addition, reviews of three early site permit applications have been completed with two of these, so far, approved. The NRC has not yet received applications for combined licenses.

The NRC has been working diligently to prepare for the licensing of new reactors by developing the necessary infrastructure (e.g., procedures, processes, and application and review guidance), hiring additional staff, and creating an entire new office - Office of New Reactors. The procedures, processes, and application and review guidance are intended to be in place for use by NRC staff and applicants several months prior to the anticipated receipt in 3rd calendar quarter of 2007 of the first combined license (COL) application. The development of the COL application guidance has been performed in the public arena to maximize opportunities for potential applicants and other external stakeholders to participate in its development. In addition, several rulemakings, in addition to Part 52, that include security, fitness for duty, and a rulemaking on Limited Work Authorizations are underway that affect new reactor licensing.

Combined License (COL) review process

The COL review process includes three primary areas of review: the safety/technical review that results in a safety evaluation report; the environmental review that results in an environmental iImpact statement; and the adjudicatory review that results in hearing findings/orders. A simplified diagram of the COL license application review process is provided as Figure 2 and shows the estimated timeframes associated with each aspect of the licensing review. In addition, Figure 2 depicts the post-licensing activities associated with completion and verification of Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) and subsequent Commission authorization for fuel load. However, the review by the task force was limited to the combined license review process and does not include review activities associated with completion and verification of ITAAC that occur after issuance of the COL. In addition, the review by the task force did not include Limited Work Authorizations, which may occur prior to or in parallel with the COL review. Figure 3 depicts the information and decision process flow for the COL licensing review.

The current schedule associated with the NRC licensing review for COL applications referencing a certified design assumes a 30-month safety/technical and environmental review followed by 12 months for adjudicatory review. The safety and environmental reviews for a COL application per 10 CFR Part 52 are currently scheduled, as part of the licensing program plan, as parallel reviews and begin when the COL application is docketed. The proposed final Part 52 rulemaking includes provisions for allowing COL applications to be submitted in two parts. In general, COL application submittals may be partitioned into the safety analysis report and environmental report with the time differential between submittals being no more than 6 months.

The NRC has aggressively promoted early and frequent interactions with prospective COL applicants. These prospective applicants have communicated that they understand the benefits and efficiencies these pre-application interactions provide. Pre-application activities associated with the safety review may include discussions of applicant's plans for submittal of Topical Reports (including review of Topical Reports), plans for submittal of limited work authorization applications (including review of these applications), plans for closing out design acceptance criteria, and potential deviations from a referenced certified design. Pre-application activities associated with the environmental reviews have been identified by NRC staff as critical to meeting their proposed schedule for completing the environmental impact statement. These pre-application activities may include the following: review of applicants pre-application environmental monitoring activities/plans, visits to proposed and alternative sites, interactions with state and local governmental authorities, and assessment of applicants initial environmental data collection activities and availability of this data for possible use in NRC confirmatory analyses.

Licensing Program Plan, Acceptance Review and Application-Specific Review Plan

During the initial planning and FY 2008 budget development phase for the new reactor program, the staff developed the design-centered review approach[1]. This approach is predicated on the industry's ability to achieve standardization (design, operational programs, engineering methods, etc.) to the greatest practical extent. For example, the greater the degree of design, engineering, and operational program standardization amongst the applicants and their reactor vendor within a given design center (i.e., GE's Advanced Boiling Water Reactor (ABWR), Westinghouse's Advanced Passive plant design AP1000, GE's Economic Simplified Boiling Water Reactor (ESBWR), and Areva's US Evolutionary Power Reactor (US-EPR)) the more the staff can leverage the concept of the "one-issue, one-review, one-position" approach for multiple applications. Thus, the staff believes that by increasing the degree of standardization, and by appropriately documenting the technical basis across the respective applications within each design center for the standardized portions of the design, a gain in review effectiveness and efficiency can be realized.

Using the design-centered review approach concept, the planning for new reactor licensing was initially based on the four design centers mentioned above and 12 potential COL applications. The plan assumed that all of the COL applications would be submitted in the first two quarters of FY 2008 for NRC review. For each of the reference COLs (i.e., first COL application for a given design center), the plan assumed that the staff would perform its technical reviews during the front end of the schedule and that the review interfaces (e.g., Advisory Committee on Reactor Safeguards interactions, Office of General Counsel review, Office of New Reactors management review and concurrence) would follow in the latter portions of the schedule. The assumption for any subsequent COL is that it is identical to the reference COL in its design center, except for site specific variations. Using this assumption, the staff decided on a 30-month schedule for the reference COL. The staff, in its planning, thought the 30-month duration would provide the flexibility needed to efficiently schedule and manage its resources to perform the majority of its technical reviews for the reference and subsequent COLs concurrently. Thus, for planning purposes, the 30-month schedule for the reference COL was generically used as the base schedule for performing its licensing reviews for subsequent COLs. For example, six utilities have communicated their plans to submit COL applications referencing the AP1000™ certified design during FY 2008. By leveraging standardization and fully utilizing the design-centered review approach, it is conceivable that the staff will be capable of issuing multiple COLs within the time frame bounded by the reference COL review schedule.

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[1]A discussion of the design-centered review approach (DCRA) was first provided to the Commission in SECY-06-0019, dated January 31, 2006. Additional information on the staff's development of the DCRA, including input solicited from potential COL applicants in Regulatory Information Summary RIS 2006-06, dated May 31, 2006, was provided in SECY-06-0187, dated August 25, 2006.

From its review of the 30-month COL technical and environmental review schedule template, the task force noted that the interrelationship between review scope, depth of review, and application completeness and technical sufficiency can influence the duration and predictability of the review schedule. The scope of review for a COL application is influenced by its reference to a certified design, reference of an early site permit, and what degree of design, engineering, and operational programs standardization has been achieved by the applicants and the reactor vendor within a given design center. For example, the scope of review for a COL application referencing a certified design would be less than a COL that does not reference such a design. Assuming a COL application references a certified design that is substantially complete (e.g., minimal reliance on design acceptance criteria, limited number of COL action items), the COL review scope would not include those portions of the design approved in the design certification. In general, reductions in review scope can lead to a reduced effort to perform the review and a reduced schedule.

The scope and depth of review for a COL application are governed by the finality achieved under the design certification and early site permit provisions of 10 CFR Part 52. When COL applications reference a certified design and/or an early site permit, the degree of finality of issues involved in a COL application increases and the scope and depth of review become increasingly confirmatory in nature. However, as the degree of finality issues in the COL application decreases (i.e., less reliance on an early site permit or certified design), the scope and depth of review broaden. The degree of completeness of a design certification and its compatibility with site-specific parameters and characteristics, new and different engineering analysis methods for demonstrating regulatory compliance, and use of new technologies to meet safety performance parameters can introduce complexities to the staff's review when analyzing their acceptability. The following table shows how the degree of finality for a COL application influences the staffs scope of review:

COL THAT REFERENCES	***DEGREE OF FINALITY***
Certified design with a completed Early Site Permit	***HIGHEST***
Certified design	↓
Completed Early Site Permit	
None	***LOWEST***

The vintage of certified designs for which design centers have been established range from the mid-1990's (ABWR) to 2006 (AP1000), to designs currently undergoing staff review (ESBWR), to designs in the pre-application review phase (US-EPR). Based, in part, on this varied vintage, and on commercial considerations, the degree of design completion (or finality)

with respect to reliance on design acceptance criteria and COL action items in a certified design (or designs-in-review) also varies. Therefore, it is reasonable to conclude, because of the varying degree of design finality between the design centers, that the schedule for review of the reference COL application for each design center will likely vary. Likewise, the subsequent COL applications within each design center could have unique review schedules depending also on whether an early site permit is referenced or not. In addition, the completeness and technical sufficiency of the site-specific design information provided in a COL application that references a certified design can have an influence on the scope and depth of the review, the level of effort required, and the duration of the review schedule.

The task force fully recognizes the value of the New Reactor Licensing Program Plan and its work flow, reporting, and project management controls and considers its capabilities essential to meeting the goals of the new reactor licensing program. However, based on its review, the task force finds the predictability of the plan's 30-month COL review schedule is dependent on two general conditions. The first condition, which affects the scope of review, is dependent upon the degree of finality (e.g., reference to a certified design and completed early site permit) associated with the COL application. The second condition, which affects the depth of review, is dependent upon the technical sufficiency of the information provided in the COL application. Based on these conditions, the task force recommends that the application acceptance review period be extended to include an assessment of both completeness and technical sufficiency so that a unique review schedule can be developed.

Environmental Reviews

The plan for new reactor licensing was initially developed using an assumption of staff review of 12 combined license applications. The plan assumed that three of these COL applications would reference early site permits and that all 12 applications would be submitted to the NRC in the first 2 quarters of FY 2008. For each of the COLs, the plan assumed that the staff would perform its environmental reviews to prepare the draft environmental impact statement during the front end of the schedule and that the review interfaces (e.g., resolution of public comments, interactions with the Environmental Protection Agency, review by the Office of General Counsel, and management review and concurrence by the Office of New Reactors) would follow during the latter portions of the schedule. Because the environmental impact statements are site-specific by nature, the design-centered review approach discussed above does not provide any significant savings for the environmental review process. The staff, in its planning, determined that a 24-month duration for completing their environmental impact statements would provide the flexibility needed to efficiently schedule and manage its resources such that it could prepare the environmental impact statements for the large number of COLs assumed in the plan.

To glean process insights, lessons learned, best practices, and suggestions for process improvements for the NRCs environmental reviews, members of the task force met with and held discussions with a variety of internal and external stakeholders involved in environmental review activities. In addition, members of the task force met with members of other federal

agencies that have been involved in environmental reviews that support federal licensing actions. Figure 4 illustrates the information gathering activities that the NRC anticipates performing for a combined license application that references an early site permit and a certified design.

In accordance with the current COL licensing review plan, the environmental review is divided into 4 phases: Phase 1, Scoping; Phase 2, Draft environmental impact statement ; Phase 3, Comment Period; and, Phase 4, Final environmental impact statement . The scoping phase follows 10 CFR Part 51 and includes site audits, a public scoping meeting, receiving and responding to scoping comments, site audits of alternate sites, internal staff processing, report preparation, generation of requests for additional information (RAIs), and applicant response to these RAIs. The Part 51 process includes the opportunity for public input, including state, local and tribal authorities, to the scoping process on what topics should be evaluated as part of the environmental impact statement. The public comment period in this phase is currently planned for approximately 60 days. Other federal agencies have public comment periods for the scoping phase that ranged from approximately 30 - 75 days. Scoping periods for NRC environmental review activities associated with recent licensing of uranium enrichment facilities, which are generally analogous to combined license reviews, have ranged from 45 to 75 days. The task force determined that the public comment period should established at 45 calendar days. This is consistent with past NRC practice, and other federal agencies, and will provide a reasonable opportunity for external stakeholders to provide their input to the NRC's environmental scoping process.

In accordance with the current COL licensing review plan, the public comment period for the draft environmental impact statement (Phase 3) has been scheduled for 75 days. The basis for the 75-day comment period included the minimum requirement for a 45-day comment period that was expanded to automatically include two 15-day extension periods. Comments on the draft environmental impact statements are received from the public, including state and local regulatory authorities, tribal authorities, and other federal agencies such as the Environmental Protection Agency. NRC and other federal agency experiences have demonstrated that commenters typically wait until the closing date for the comment period to submit their comments regardless of the duration of the comment period. In addition, sister agencies with which the task force interfaced shared their experiences with comment period schedules and extensions for their environmental impact statements resulting finally in a contraction back to the original 45-day comment period with no apparent adverse impacts. Although the draft environmental impact statements are typically large documents and comment period extension requests come from other governmental authorities with which the NRC must interface, the task force believes that the comment period should be reduced to 45 days. In addition, the task force believes that because NRC's environmental reviews will rely heavily on contractor assistance, extensions of public comment periods could result in these contractor resources becoming unavailable due to other schedule commitments.

The task force believes that the recommended changes to the public comment periods discussed above achieve consistency with the National Environmental Policy Act requirements for public comment periods. In conjunction with the changes to the schedule duration for the public comment period, the task force believes that the staff, with consultation from the Office of General Counsel, should develop appropriate criteria and a threshold for granting an extension to the public comment period. In addition, the staff should apply this criteria to the public comment period durations that are established in the application-specific review schedules.

Other permitting agencies such as federal land or natural resource managers make National Environmental Policy Act decisions independent of the NRC. Sister agencies can cooperate and can "adopt" all or portions of another agency's environmental impact statement or its own that were prepared for other purposes (e.g., license renewal, early site permits, etc.). The NRC can "incorporate by reference" or "tier" off these other documents; however, for the NRC to maximize any benefit, these other documents must have been completed within the time frame that the NRC is preparing its environmental impact statement or within recent proximity to that time frame. In addition, for COL license reviews, the NRC can tier off its own environmental impact statements performed for existing co-located sites/plants and for early site permits.

Hearing Process

For the adjudicatory review, the current process for providing notice of hearing and scheduling of hearings on applications is specified in 10 CFR 2.104. In general, for a combined license application, a notice of hearing shall be posted as soon as practicable after the application has been docketed. In cases where the NRC decides to determine acceptability of the application for docketing on the basis of technical adequacy <u>and</u> completeness, the notice of hearing should be provided as soon as practicable after the application is docketed. The diagram of the COL licensing review process provided as Figure 2 of the attachment shows a 12-month hearing schedule and includes the mandatory hearing.

Section 185b. of the Atomic Energy Act of 1954, as amended (AEA) authorizes the Commission to issue a combined construction and operating license ("combined license") only after conducting a public hearing in accordance with section 189a.(1)(A) of the Atomic Energy Act. A section 189a. hearing may be divided into two portions, known as the "contested" portion and the "mandatory" or "uncontested" portion.[2]

Section 189a. of the Atomic Energy Act requires the NRC to conduct a hearing (i.e., "mandatory hearing") on construction permit issues. In the early site permit proceedings thus far, each hearing has required more than 1000 hours of work for the licensing board alone, and the licensing board members have estimated that a COL mandatory hearing

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[2]The uncontested or mandatory portion of a section 189a. hearing is often referred to as a "mandatory hearing."

could require anywhere from 2000 to 10,000 hours work by a board. In addition, staff resources to support the three early site permit proceedings have ranged from approximately 2000 to 3000 hours for each proceeding. The Commission has been considering alternatives to the Atomic Safety and Licensing Board Panel's resource-intensive hearings on uncontested issues. One of these alternatives include Commission conduct of legislative-style hearings. The task force believes that this option is the best alternative to the current conduct of these hearings.

At the time that the requirement for a mandatory hearing was enacted -- in the early days of nuclear regulation – the requirement was an important procedural device for ensuring openness and for increasing public confidence. Nevertheless, it is doubtful that hearings on uncontested issues need to continue to be conducted as they have been. The goals of the mandatory hearing requirement in section 189a. are being met in a variety of other ways under a variety of statutes that were not in existence when the requirement was enacted. These include the Freedom of Information Act, the Federal Advisory Committee Act, the Government in the Sunshine Act, and the elaborate public process under the National Environmental Policy Act. Perhaps most important, the NRC does not have the promotional responsibilities the Atomic Energy Commission had when the mandatory hearing requirement was enacted.

Although the task force recommends that the Commission conduct the legislative-style hearings, the task force recognizes that this alternative poses some difficulties. Though the regulations make clear that the Commission can preside over "hearings", they have not in fact done so more than a few times. Also, it is possible that, faced with the broad-scope findings that 10 CFR 2.104 requires be made in hearings on uncontested issues, a future Commission itself might become tempted to engage in resource-intensive reviews. Also, a significant change in long-standing practice may prove difficult to justify to people who are accustomed to thinking of NRC "hearings" as having procedures more native to the court room than a commission meeting room. Recent Commission decisions (i.e., CLIs) on the conduct of mandatory hearings may also have solidified certain expectations about what these hearings should be like.

The task force, nonetheless, believes that the current practice in such hearings is not justified, either by the developed legal landscape that surrounds these hearings, or by any safety significance of the results of these hearings. The thoroughness of the agency's technical review, the fully developed National Environmental Policy Act process, the wide range of openness statutes, and the fully public Advisory Committee on Reactor Safeguards review – conducted by more technical experts than a single board can bring to bear – all justify a more proportioned practice; and the Commission is well-placed to exercise the necessary sense of proportion.

The contested portion of a hearing involves the resolution of controversies between the NRC staff and the applicant for a license, or the resolution of issues raised in a petition for leave to intervene opposing a license application. Petitions for leave to intervene are granted if the petitioner has demonstrated standing and proposed at least one admissible contention.

During the contested portion of a hearing, the presiding officer must decide, based on the governing regulatory standards and the evidence submitted, whether the applicant has met its burden of proof (except where the NRC staff has the burden).

In contrast to the more in-depth review undertaken during the contested portion of a hearing, the mandatory or uncontested portion involves a “sufficiency” review, where the presiding officer decides whether the safety and environmental record is “sufficient” to support the issuance of a license. The presiding officer reaches this decision by examining whether the NRC staff’s review was adequate and had reasonable support in logic and fact. Where there are no contested issues to be resolved, a hearing will consist solely of the mandatory or uncontested portion.

From a timing perspective,the NRC’s Model Milestones for Subpart L proceedings contemplate commencement of evidentiary hearings within 175-days of issuance of the staff’s safety and environmental review documents and issuance of an initial decision by the presiding officer within 90-days of completion of the evidentiary hearing and closing of the record.

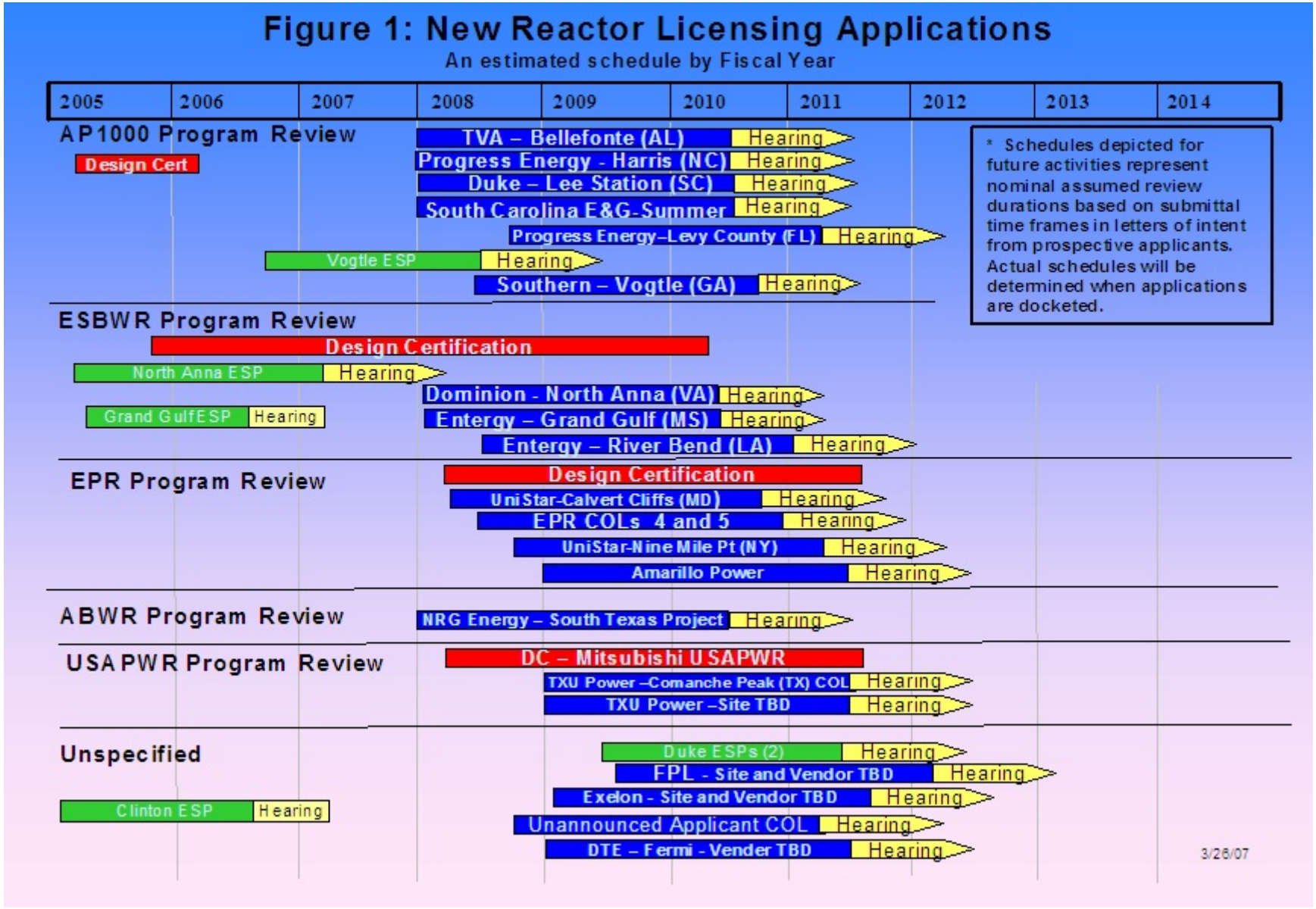


Figure 1: New Reactor Licensing Applications
An estimated schedule by Fiscal Year
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
AP1000 Program Review
Design Cert
TVA – Bellefonte (AL)
Hearing
Progress Energy - Harris (NC)
Hearing
Duke – Lee Station (SC)
Hearing
South Carolina E&G-Summer
Hearing
Progress Energy–Levy County (FL)
Hearing
Vogtle ESP
Hearing
Southern – Vogtle (GA)
Hearing
* Schedules depicted for future activities represent nominal assumed review durations based on submittal time frames in letters of intent from prospective applicants. Actual schedules will be determined when applications are docketed.
ESBWR Program Review
Design Certification
North Anna ESP
Hearing
Dominion - North Anna (VA)
Hearing
Grand Gulf ESP
Hearing
Entergy – Grand Gulf (MS)
Hearing
Entergy – River Bend (LA)
Hearing
EPR Program Review
Design Certification
UniStar-Calvert Cliffs (MD)
Hearing
EPR COLs 4 and 5
Hearing
UniStar-Nine Mile Pt (NY)
Hearing
Amarillo Power
Hearing
ABWR Program Review
NRG Energy – South Texas Project
Hearing
USAPWR Program Review
DC – Mitsubishi USAPWR
TXU Power –Comanche Peak (TX) COL
Hearing
TXU Power –Site TBD
Hearing
Unspecified
Duke ESPs (2)
Hearing
FPL - Site and Vendor TBD
Hearing
Exelon - Site and Vendor TBD
Hearing
Clinton ESP
Hearing
Unannounced Applicant COL
Hearing
DTE – Fermi - Vender TBD
Hearing
3/26/07

Figure 2: Combined License Review Process

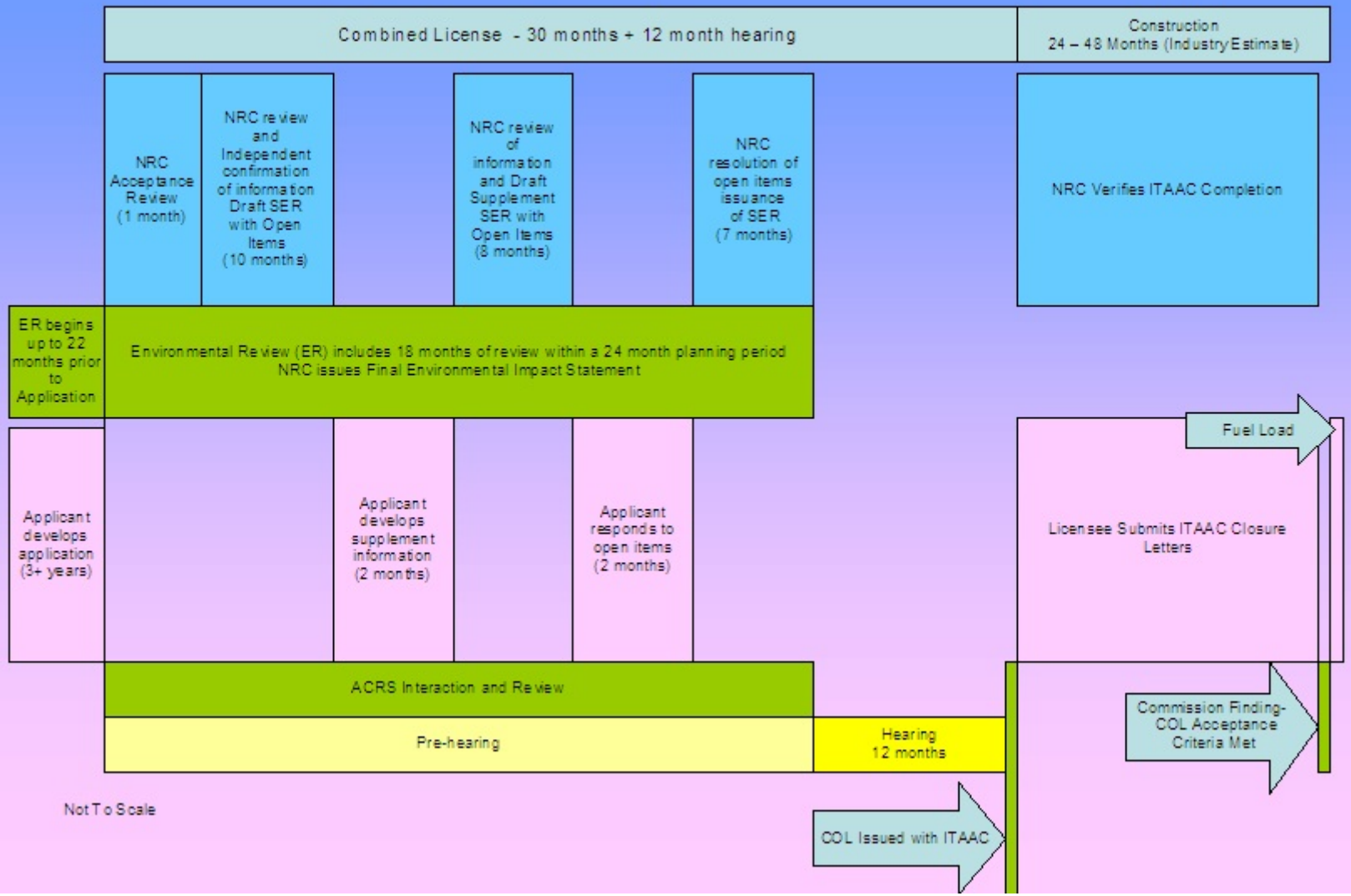


Figure 3: Combined License Process

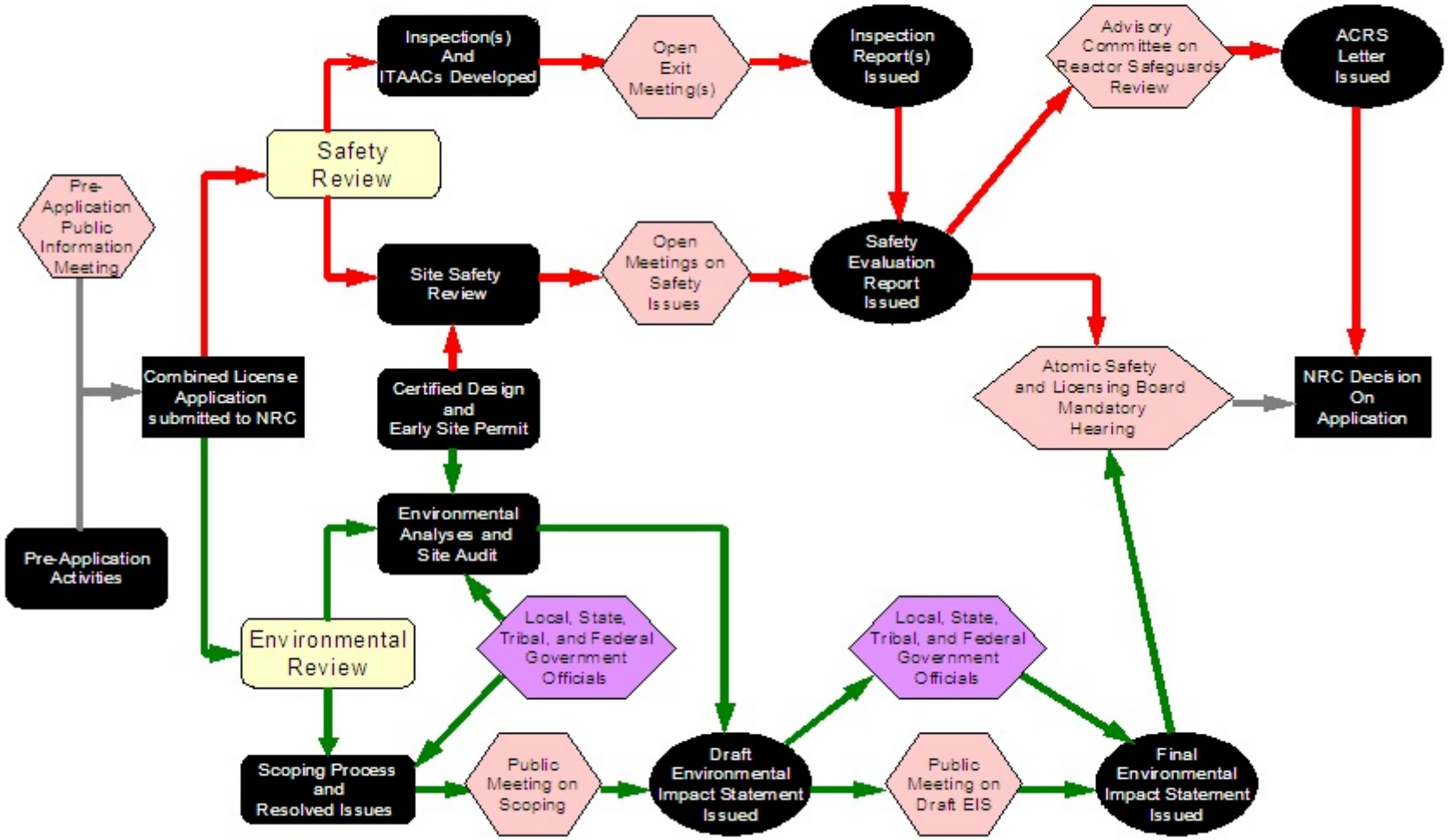
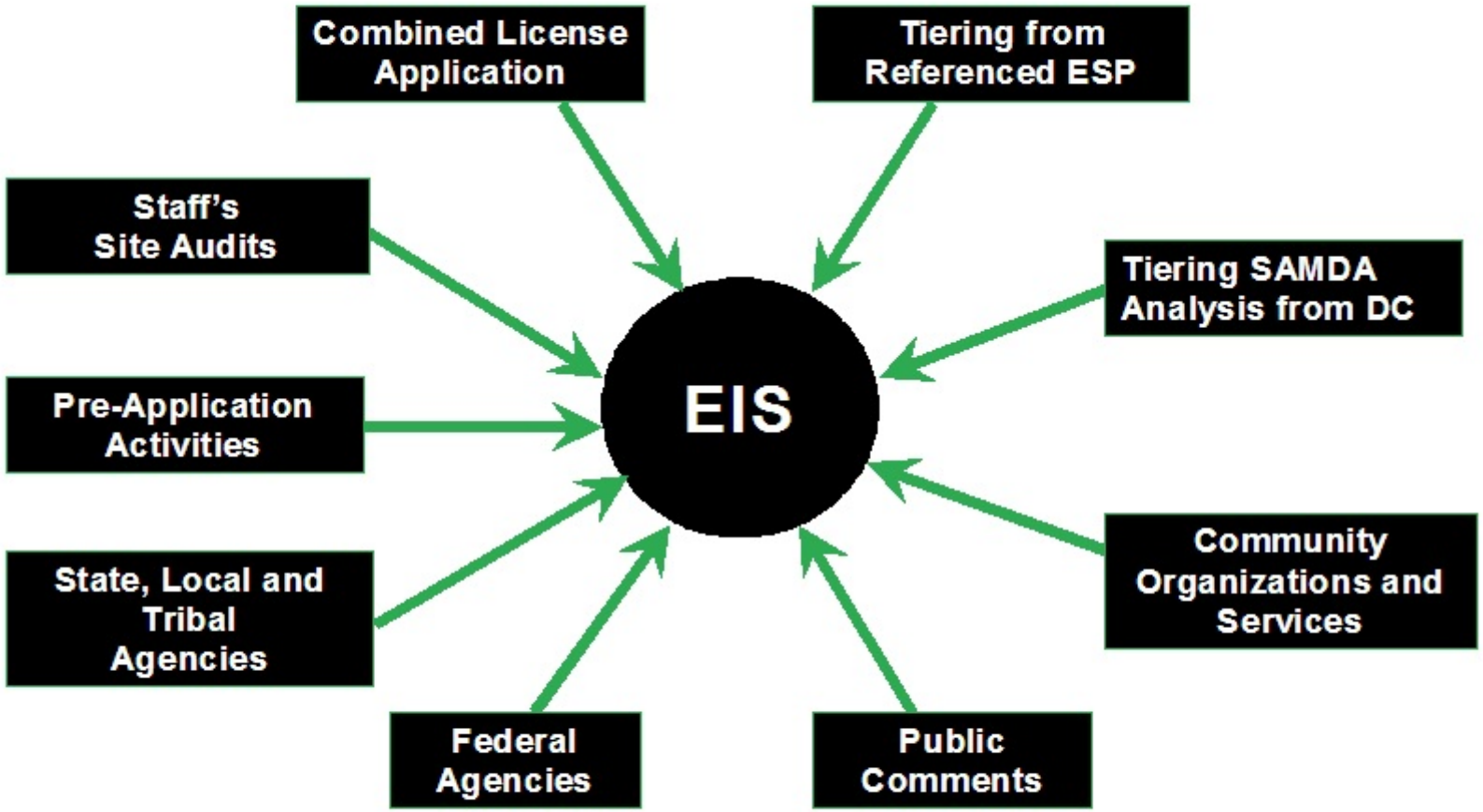


Figure 4: Information Gathering (COL Referencing an ESP and DC)



Enclosure 3
KEYS TO SUCCESS
(Report of the Combined License Review Task Force)

During its review effort, the task force discussed many ongoing initiatives or planned activities that should improve the effectiveness and efficiency of the new reactor licensing review process. Although the task force did not identify any significant recommendations to improve these initiatives and activities, the task force thought it was important to highlight that the staff should continue or complete these activities to ensure the success of the new reactor licensing review process. Besides these initiatives and activities, the staff has based its planning on certain key assumptions, which if altered, could negatively affect the efficiency and effectiveness of the currently planned review process. To achieve success with the new reactor licensing process, the staff must ensure that these assumptions remain valid. These key success factors and assumptions are:

1) Resources

To perform the multiple, concurrent reviews of new reactor license applications assumed in the plan, management must provide the staff, resources, and funding necessary to implement the combined license review plan. These resources must be provided in a timely manner, so that staff can be sufficiently trained, the necessary licensing infrastructure developed, adequate contract resources established prior to receipt of the application, the expected office space acquired to promote efficient and effective work execution, and the necessary information technology infrastructure acquired and established to ensure that the license review process is efficient and effective. Any delay in providing these resources, or any significant reductions, could adversely affect successful fulfillment of the plan.

2) *New Reactor Licensing Program Plan*

The staff is developing a detailed planning tool to facilitate improved planning and resource management of the new reactor license review process. This tool should result in much improved scheduling and resource loading than past agency review processes and, therefore, the reviews should be more efficient and timely. This planning tool encompasses the technical, environmental, and adjudicatory phases of the review process. The New Reactor Licensing Program Plan provides a planning template that the staff can use to develop individualized schedules for each applicant. The task force suggests that the staff continue development of the tool, and that thorough beta testing of the system, including table top exercises, be completed to assess the robustness of the tool. In addition, management should ensure that the roll-out of the New Reactor Licensing Program Plan includes communications and training with all staff regarding use of this plan, how the plan will change the level of detail and rigor of schedule adherence, the need to develop contingency plans for emergent issues, and how lessons learned will be identified, collected and applied to ongoing and subsequent reviews.

3) *Application Completeness and Technical Sufficiency*

The staff has based its planning for the new reactor licensing review process on the assumption that applicants will submit complete and technically sufficient applications. If the application does not include the technical information needed to make a licensing decision, the staff may need additional time and resources. To ensure this assumption remains valid, the staff also has a burden to provide guidance on the necessary application content and to interact with the applicant early during the application acceptance review process to obtain supplemental technical information for their review, as necessary.

4) *Requests for Additional Information (RAIs)*

Management of the process for developing staff RAIs is needed to achieve timely resolution of issues during the review process. In its schedule planning, the staff assumed that the application will be complete and technically sufficient and, thus, will require only one round of RAIs that are focused primarily on key technical issues. In addition, the staff assumed that applicant responses to RAIs will be timely (i.e., within 30 days), complete, and will be sufficient to resolve the issue. To ensure the validity of this assumption, management should continue to carefully scrutinize all staff-proposed RAIs to ensure that they are clear and unambiguous and that the requested information is necessary to support a safety decision. The staff's plan to develop RAI templates should help the technical staff prepare consistent, well-supported and clear requests. In addition, the staff should continue its practice of communicating and discussing its proposed RAIs with the applicant in advance of their formal issuance. This practice will continue to foster improved understanding of the staff's requests and of the information needed. In addition, this practice provides the applicant with an opportunity to quickly respond to or resolve the staff's concerns, demonstrate that the requested information is not necessary, or direct the staff to where the requested information has already been provided in the application. If more than one round of RAIs is necessary, or if the applicant fails to respond in a complete or timely manner, the staff's review schedule will be affected.

5) *Communications*

One key to success that was significant for previous, complex NRC licensing review efforts was having frequent and open communication between the staff and the applicant, including senior management, to discuss project status, schedules and milestones, emergent issues, and priorities. The staff should continue with its plans for ensuring open and effective communications with applicants for new reactor licenses at all agency levels.

Another key to effective communications in previously successful NRC projects was the use of dedicated project managers for the safety and environmental reviews. A single point of contact who is focused on managing an applicant's license review throughout the licensing review process was also identified as a key to success. In addition, having knowledgeable points of contact for the safety and environmental reviews helps in providing a sense of

regulatory stability for the applicant. The staff and stakeholders often note frequent and detailed communication between the project managers and the applicant as a component of past successful reviews, and the staff should continue this effective practice.

6) *NRC Staff Training and Qualification*

The NRC technical staff and its contractors involved in new reactor license reviews, including their management, should have detailed and thorough training on the appropriate internal processes and procedures to ensure that all project members have the skills and tools necessary to be successful. This training includes instruction on basic agency practices for new employees, training on new processes and procedures for current staff, training on the Part 52 licensing process, training on new reactor designs, and focused training on the New Reactor Licensing Program Plan (see Item 2 above). In addition, training should focus on critical licensing process steps such as preparation of requests for additional information and development of safety evaluation report inputs.

7) Design-Centered Review Approach

To achieve maximum efficiency and effectiveness in the licensing review process, the applicants and staff must fully leverage the advantages of the design-centered review approach[1]. This approach should allow for a much more standardized process, such as the use of standard format and content on application submittals for operational program descriptions, development of standard safety evaluation sections (e.g., templates), and application of Topical Reports across all design centers. This approach should also allow for efficiencies in the reviews conducted by the Advisory Committee for Reactor Safeguards, especially for the subsequent combined license applications.

The design-centered review approach should also facilitate the timely resolution of issues during the pre-application phase of the process by applicant's adopting standard methodologies from approved Topical Reports.

8) *Information Technology*

The staff is developing new information technology tools for use in facilitating the new reactor license review process. The tools will provide the necessary documents and references in a searchable format, and provide links for easy access to any needed references or supporting information. Management should support continued development of these tools to advance the staff's goal of attaining an "information age" licensing review process.

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[1]A discussion of the design-centered review approach (DCRA) was first provided to the Commission in SECY-06-0019, dated January 31, 2006. Additional information on the staff's development of the DCRA, including input solicited from potential COL applicants in Regulatory Information Summary RIS 2006-06, dated May 31, 2006, was provided in SECY-06-0187, dated August 25, 2006.

9) *Pre-application Reviews*

A lesson learned from previous licensing review efforts is that focused discussions between the applicant and staff during pre-application reviews can facilitate the development of a complete and quality application by providing a more informal format for open discussion of potential issues, and allow the staff to gain a better understanding of the applications details prior to the acceptance review and the start of formal review. These pre-application reviews should be used for both the safety and environmental review processes.

10) *Document Preparation and Processing*

The staff has identified some process efficiencies that can be achieved in the preparation of documents during the license application review process. The staff is planning to prepare templates for requests for additional information (RAIs) and for certain sections of the safety evaluation report to assist in drafting the necessary licensing documents. In addition, previously successful licensing review efforts gained efficiencies by preparing, in advance, guidance for detailed editing during preparation of licensing documents, thereby reducing the time spent on formatting and editing final documents. The staff is also planning to prepare the safety evaluation report with open items while conducting the application review and preparing RAIs instead of performing these activities in series. These improvements, which will require additional staff effort prior to the anticipated submittal of applications, should improve overall efficiency over time.

11) Interim Staff Guidance

A lesson learned from previous licensing efforts is the use of Interim Staff Guidance (ISGs). The task force was briefed on the successful use of ISGs during license renewal reviews and license reviews for uranium enrichment facilities. The ISG process was used effectively and efficiently to document staff positions on generic technical issues that otherwise would have been subject to documentation using a lengthy formal revision process for regulatory guides and standard review plans. The ISG process allowed staff positions to be documented in a formal process that did not delay the license review process. This process allowed a formal revision to a regulatory guide or standard review plans to incorporate the ISG to be processed independent of the license review schedule. The task force recommends that staff continue to use the ISG process for COL application reviews to ensure that finalization of any staff positions on generic technical issues does not unnecessarily affect the COL license review schedule.

12) Use of other Environmental Impact Statements

The licensing review strategy for COL applications includes the use of environmental review efforts by “incorporating by reference” the applicable portions of environmental reviews or “tiering off” National Environmental Policy Act reviews performed by other government

agencies (e.g., Army Corps of Engineers, Federal Energy Regulatory Commission, etc.). In addition, previous NRC environmental reviews are planned to be referenced where appropriate. These could be identified during pre-application review activities that are focused on the environmental review process and potential scoping for the application. In addition, the task force recommends that staff seek additional opportunities for using environmental review efforts by other agencies.

Enclosure 4
AREAS NEEDING FURTHER CONSIDERATION
(Report of the Combined License Review Task Force)

During its review effort, the task force identified some areas for further consideration that, it believes, could potentially result in additional improvements to the new reactor license review process. The task force recommends that these additional areas be investigated further by appropriate agency staff.

1) The staff should consider applying appropriate Lean Six Sigma techniques to identify additional process improvements in the safety portion of the COL licensing review. Specifically, the techniques could be used to evaluate the licensing documentation processing work flow to identify improvements.

2) The staff should consider how the schedule duration for the environmental scoping phase may be improved for COL applicants that reference an early site permit or a new plant site that is co-located (i.e., within the same owner-controlled area) with an existing nuclear plant. However, the staff should also consider the schedule impact for the environmental scoping phase for a COL applicant that submits its combined license application at a point in time significantly later (e.g., 10 or more years) than the issuance of an early site permit that is referenced in the application. The staff should include these considerations in their expanded COL application acceptance review and that they be reflected in development of each application-specific review schedule.

3) As the new reactor licensing workload becomes more predictable, the staff should consider re-establishing environmental expertise on staff. The current plan assumes heavy reliance on contractors to perform the environmental review activities, including preparation of the environmental impact statements for the staff's new reactor license application reviews. In addition, reliance on contractors was designed to minimize impacts on staff resources as a result of the uncertain COL application review workload. Implementation of this recommendation may not result in any immediate schedule savings; however, as the new reactor workload becomes more predictable, more schedule flexibility may be achieved and response to emergent issues or schedule changes may be accommodated more efficiently. In addition, substantial resource savings could be realized through the use of direct staff resources instead of contractor resources. The task force envisions that these resource savings could be realized in the longer term as staff environmental expertise increases, perhaps as the "second wave" of subsequent COL applications are received for review by the staff. In addition, the task force believes that by re-establishing this expertise on staff, opportunities to extend the application of this expertise to licensing review activities other than new nuclear power generation facilities (e.g., uranium enrichment facilities, fuel storage and reprocessing facilities, breeder reactors, or radioisotope transmutation facilities) may be created.

4) Consistent with the design-centered review approach, the task force recommends that the Advisory Committee on Reactor Safeguards (ACRS) pursue efficiencies and effectiveness for the review of subsequent COLs by adopting a “delta” review approach. That is, the ACRS, with staff input from an expanded acceptance review, could focus their reviews on the significant differences between the reference COLs and subsequent COLs. These differences would likely include the site-specific design features of the facility, including security design features and emergency plans. The task force believes that additional efficiencies may be realized by the ACRS by further developing this “delta” review approach.

5) The staff plans to provide external stakeholders with detailed information on the New Reactor Licensing Program Plan. As part of the rollout of this plan, the task force recommends that the staff provide public forums for constructive discussions on the plan and its proposed use (e.g., suitable public forums may include the design-centered working group meetings established for discussion of issues common to COL applicants referencing the same certified design). The purpose of these discussions would be to solicit additional recommendations on process improvements.

Enclosure 5
CHALLENGES AND UNCERTAINTIES
(Report of the Combined License Review Task Force)

As a result of its reviews and discussions, the task force recognized that some considerable challenges and uncertainties with respect to the planned 42-month combined license review schedule remain, regardless of the improvements recommended by the task force. Some of these factors are not entirely within the NRC's control. These challenges and uncertainties are discussed below.

1) Rule changes, and revisions to application and review guidance

The first wave of COL applicants have submitted letters to the NRC announcing their intent to submit applications by the 4th calendar quarter of 2007. Based on the most recent information, approximately seven applications for combined licenses are planned for submittal in calendar year 2007. Rule changes, development of application guidance, and updates to NRC staff review guidance for combined license applications pursuant to 10 CFR Part 52 have been ongoing and continue to be in progress while the task force was convened. Rule changes directly impacting COL applicants include changes to Parts 2, 26, 51, 52 and 73. These rule changes are progressing in separate rulemaking efforts with the changes to Parts 2, 51, and 52 being the furthest along and in the final rulemaking phase.

Regulatory guidance for COL applicants (RG 1.206) is also in development and was issued as a draft for public comment in September 2006. Comment resolution is ongoing and further refinement of draft RG 1.206 awaits Commission approval of the final Part 52 rule. COL applicants have been utilizing draft RG 1.206 in the development of their applications and have engaged the NRC staff in numerous public workshops on this guidance and in design-centered working group meetings. The NRC's standard review plan (SRP) is also being updated to support review of applications for combined licenses per 10 CFR Part 52. The majority of SRP updates were issued in March 2007 to support the COL applications planned for submittal in calendar year 2007.

The NRC has been engaged in providing updated regulations, and application and review guidance to support new reactor licensing applications; however, the timing and clarity of these documents present challenges and uncertainties associated with efficient and effective implementation of the COL licensing review process. In particular, rulemaking associated with Fitness for Duty, Emergency Preparedness, and Security, and the associated application and review guidance lags behind the Part 52 rulemaking and presents challenges and uncertainties for both applicant and staff in terms of information necessary to be provided as part of the COL application and staff acceptance criteria associated with review of the application. Without the rulemaking being completed, having updated application and review guidance in a reasonable timeframe prior to the planned submittal the COL applications will be difficult to achieve. This

could result in the staff and the applicants not having full alignment between the expectations and applications.

In addition, a proposed supplement to the Part 52 rulemaking that governs limited work authorizations (LWAs) is currently under review by the Commission. This rulemaking provides for a revised definition of the term “construction” and allows for COL applicants to submit LWAs several months prior to submittal of their combined license applications. For LWAs, the NRC is also required to perform an EIS. This presents another challenge to the NRC in terms of resource planning since current plans did not envision having to perform an additional environmental review for the LWA. In addition, there are uncertainties associated with the number of LWA’s that may be submitted along with or prior to COL applications and the resulting diversion of staff resources to these unplanned activities.

The task force believes that the challenges and uncertainties associated with the rulemakings, and revisions to application and review guidance that are currently ongoing will be diminished for COL applications that are expected after calendar year 2007.

2) Untested Process

The Part 52 licensing process contains three subparts: Subpart A for obtaining early site permits for suitability of construction and operation of a nuclear plant; Subpart B for certifying new nuclear power plant designs, and: Subpart C for applications for combined construction and conditional operating licenses for nuclear power plants. Of these three subparts, applicants and NRC have exercised only two of them: the early site permit process, and; the design certification process. The task force fully recognizes that, although the NRC can and will utilize the experience gained in exercising the early site permit and design certification processes, there are inherent limitations associated with identifying process improvements and realizing the expected efficiencies from their implementation on an untested process. The task force notes that the challenges and uncertainties associated with the planned 42-month COL review schedule are illustrated by the challenges that both the staff and applicants have experienced with meeting past schedules for early site permit and design certification review activities. For example, the NRC process to issue the first early site permit, for the Clinton site, took 42 months to complete whereas the original schedule for this effort was 35 months.

To support the NRCs effort in simultaneously reviewing several applications for new reactors, a New Reactor Licensing Program Plan was created as a tool to assist the staff in developing unique license review schedules for each COL applicant. This program plan, discussed previously, will be a first-time deployment of such a large-scale, integrated plan at the NRC. The task force recognizes that there are inherent challenges and uncertainties associated with first-time deployment of such a large-scale, integrated program plan. These challenges and uncertainties may include both software and hardware issues, as well as, challenges associated with change management.

3) External interfaces - Security and Emergency Preparedness

In accordance with the requirements in 10 CFR 50.47, 10 CFR 52.97, and Section 657 of the 2005 Energy Policy Act (EPAct), the NRC must obtain specific inputs on nuclear plant licensing reviews from the Department of Homeland Security (DHS) prior to issuance of a new reactor license. The NRC and the Federal Emergency Management Agency (FEMA) have a long-standing memorandum of understanding (MOU) that address the support FEMA provides concerning emergency preparedness with respect to licensing actions. A new MOU has been established to address DHS support concerning security.

A considerable length of time has elapsed since the NRC and DHS/FEMA last exercised their collaborative responsibilities in licensing a new reactor. In addition, changes in regulatory requirements and processes associated with 10 CFR Part 52 and new requirements related to Section 657 of the EPAct have not been tested. As the efforts to license new reactors proceed, it is likely that challenges will be encountered because new processes will be utilized for the first time and new staff may be involved. Of particular concern is how design basis threat issues that are identified by DHS will be communicated and resolved.

Both NRC and DHS have sought additional resources for the anticipated increase in licensing actions. DHS is pursuing the acquisition of needed staff resources, and most likely will rely on contract support for a substantial amount of the work for the initial anticipated COL applications. Also, in accordance with Section 612 of the recent “Security and Accountability for Every Port Act of 2006” (Safe Port Act), the management of the program office responsible for radiological emergency preparedness reviews is being transferred, effective April 1, 2007, from DHS Preparedness Directorate to FEMA. This transfer of responsibility raises several issues that result in process uncertainties: selection of new senior managers; development of working relationships with new points of contact; alignment of priorities for new reactor licensing relative to other FEMA responsibilities; and, consistency of reviews in the absence of experienced staff and clear review criteria.

As discussed above, the NRC is in the final stages of an extensive revision of COL application and review guidance documents associated with new reactor licenses. In their public comments on these documents, industry representatives have expressed concerns regarding the absence of DHS/FEMA planning references and limited review criteria for the offsite emergency response plan. This presents uncertainty with respect to the review criteria to be utilized by DHS/FEMA and their ability to support hearings involving offsite emergency planning issues.

DHS is an independent federal agency with unique and varied priorities. The potential exists for demands on DHS/FEMA resources to respond to higher priority activities (e.g., response to natural disasters) that may result in diversion of its limited resources from new reactor licensing activities. This creates the potential for an unpredictable and potentially significant impact on new reactor licensing schedules.

4) External Interfaces - Environmental Reviews

With respect to the environmental review process, COL applicants must comply with the requirements of other governmental agencies and legislation in addition to the NRC, the Atomic Energy Act and the National Environmental Policy Act. There are many other governmental agencies that the NRC and/or the COL applicant must interface with at the State, Tribal and Federal level. For example, the Endangered Species Act requires the NRC to *consult with* the Department of Interior and the Department of Commerce regarding endangered or threatened species or their habitat. The National Historic Preservation Act requires the NRC to *consult with* the State Historic Preservation Office prior to authorizing any land-disturbing activities that could affect historic properties. The Clean Water Act requires the COL applicant to obtain the necessary *permits* from the US or State Environmental Protection Agency for discharges to navigable waters and from the US Army Corps of Engineers for any necessary modifications to shorelines, including dredging. The NRC must also ensure that COL applicants receive certification from the State Coastal Management organization in accordance with the Coastal Zone Management Act before it can take the action to issue a COL or early site permit. The task force recognizes that, with the multitude of consultations required and the permits necessary to be obtained from external organizations prior to any licensing action on the part of the NRC, inherent challenges and uncertainties associated with the new reactor licensing process are introduced by these external interfaces with respect to the timeliness of their actions.

5) COL Applicants

The COL applicants have control over a number of factors that will directly impact the timeliness of the NRC'c combined license review process. Some of these factors are:

- completeness and technical quality of the application
- completeness and technical quality of the applicant's responses to requests for additional information (RAIs)
- revisions/supplements to the COL application that are submitted for other than RAI responses (e.g., design changes to certified design, design changes to site-specific designs, completion of designs subject to design acceptance criteria, completion of COL action items, etc.)
- continued funding and support by the applicant for its COL application preparation
- continued funding and support by the applicant over the duration of the NRCs review of the COL application
- timeliness of notification of intent to submit an application, and timeliness of actual application submittal

Lastly, in accordance with the requirements in 10 CFR 2.101(a)(5), the NRC provides flexibility for applicants to submit their applications in two parts, with one part not to proceed the other by more than 6 months. In general, the environmental report has been considered as the

one likely part of the application that could be filed first with the remainder of the application, including the final safety analysis report, security plan, emergency plan, etc. considered as the second part of the application to be filed no more than 6 months after the first part. In light of the importance of the pre-application activities to the staff's environmental review activities and the degree to which these can be used to facilitate the preparation of the environmental impact statement, it is critical that COL applicants communicate to the NRC, as early as is practicable, their intent to submit their environmental report in advance of the remaining part of the application. Failure to do so may severely limit the staff's ability to maximize the benefit of pre-application activities in order to achieve the planned review schedule.

Enclosure 6
SUGGESTIONS NOT RECOMMENDED
(Report of the Combined License Review Task Force)

1) *Timing of Evidentiary Hearings Relative to NRC Staff's Environmental Review*

The task force received two recommendations regarding the timing of evidentiary hearings relative to completion of the staff's environmental review. One recommendation suggested that evidentiary hearings and most motion practice on admitted environmental contentions should be postponed until completion of the staff's final environmental impact statement. This proposed approach was based on experience that environmental contentions typically allege the omission of required information, and that such omissions can often be cured during the staff's review and development of the final environmental impact statement. Once the alleged omission is cured, such contentions could be disposed of as moot via summary disposition or stipulation by the parties, making evidentiary hearings unnecessary and limiting motion practice to the staff's final environmental impact statement.

While the task force recognizes the efficiencies inherent in holding evidentiary hearings on contested environmental issues only after issuance of the staff's final environmental impact statement, we also recognize the efficiencies inherent in allowing motion practice to proceed as the staff's draft environmental documents become available. For example, allowing the use of summary disposition motions upon issuance of the staff's draft environmental impact statement could reduce the number of issues to be decided, as alleged omissions in an applicant's environmental report may be cured and mooted upon issuance of the staff's draft environmental impact statement. Allowing disposition of such issues upon issuance of the draft environmental impact statement will enable the parties in licensing proceedings to focus upon matters actually in controversy as the adjudication progresses, and avoid a situation where parties are obligated to prepare for litigation of all admitted contentions until summary disposition motions are filed and decided later in the proceeding (i.e. after issuance of the final environmental impact statement). Therefore, the task force does not recommend limiting motion practice until after issuance of the staff's final environmental impact statement.

In contrast, the task force considered a second recommendation that proposed holding evidentiary hearings on environmental issues early in the adjudicatory process. Specifically, the recommendation proposed holding hearings after publication of the staff's draft environmental impact statement and was based on the belief that early resolution of environmental contentions would provide finality and enhance predictability during the licensing process. Similar arguments have been made in the public domain over the past year.[1]

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[1] *See Speeding Up the Process at the NRC,* Legal Times, Vol. XXIX, No. 24, Week of June 12, 2006; Presentation entitled, *The Importance of a Disciplined and Efficient Review Process for New Reactors – Managing the Legal Challenges,* presented at the American Nuclear Society 2006 Utility Working Group Conference and Vendor Technology Expo, *Excellence Today and Into the Future*, August

The issue of whether to allow adjudication of the merits of environmental contentions – such that any evidentiary hearing could be conducted following the issuance of the staff's draft environmental impact statement, but before issuance of the final environmental impact statement – was recently certified to the Commission by the Atomic Safety and Licensing Board in the Vogtle Early Site Permit proceeding.[2] The task force offers no recommendation on this issue, as the question is now before the Commission in the context of an ongoing early site permit proceeding.

2) *Use of Commission Orders to Provide Binding Guidance on Key Policy Issues*

The task force considered a recommendation that the Commission resolve key policy issues in its pre-hearing Commission Orders, which are typically issued soon after docketing or tender of license applications along with the Notice of Hearing. Specifically, it was proposed that the Commission resolve substantive issues, such as the feasibility of geologic disposal of spent nuclear fuel, the consideration of need for power and alternatives to nuclear power under the National Environmental Policy Act, nuclear nonproliferation issues, the potential targeting of nuclear power plants by terrorists, and spent fuel reprocessing in its Commission Order. Similar arguments have been made in the public domain over the past year and these arguments have also included assertions that removing such policy determinations from the purview of the licensing hearing would properly focus the hearing on resolution of factual disputes.[3] More recently, suggestions that such generic policy decisions could be made via the NRC's rulemaking process have also been made in the public domain.[4]

The task force recognizes that the Commission has used and should continue to use its general supervisory authority over licensing hearings to define the scope and timing of adjudication. For example, the Commission has used its Notices of Hearing and Commission Orders to enumerate the matters of fact and law to be decided in the proceeding, reserve resolution of specific issues to the Commission itself (e.g. admissibility of environmental justice contentions), direct the Atomic Safety and Licensing Board to certify novel legal and policy

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6-7, 2006, slide 9; Inside NRC, Volume 28, Number 22, Oct. 30, 2006, at 10.

[2] *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-07-03, 64 NRC ___ (March 12, 2007)(slip op. at 42-44).

[3] Presentation entitled, *The Importance of a Disciplined and Efficient Review Process for New Reactors – Managing the Legal Challenges,* presented at the American Nuclear Society 2006 Utility Working Group Conference and Vendor Technology Expo, *Excellence Today and Into the Future*, August 6-7, 2006, slide 13; *see also* Inside NRC, Volume 28, Number 17, Aug. 7, 2006 at 1.

[4] *See* Inside NRC, Volume 29, Number 3, Feb. 5, 2007, at 11-12.

issues to the Commission for resolution, and direct the Atomic Safety and Licensing Board and all parties to a proceeding to abide by certain scheduling milestones.

However, while the Commission Orders referenced above do have important effects on the timing and scope of licensing hearings, they have not generally been used to resolve substantive issues *prior to* adjudication, thereby removing such issues from consideration by placing them outside the scope of the adjudication. By operation, such a practice would have the effect of eliminating the opportunity to request a hearing on the issues being resolved in the Commission Order, which is typically afforded by the NRC's rules governing issuance of orders.[5] Further, the legal validity of adopting binding policy decisions that would preclude consideration of issues during subsequent NRC licensing proceedings - through methods outside of established adjudicatory or notice and comment rulemaking procedures - is questionable at best.[6]

The Commission has, however, resolved generic issues by rule, thereby excluding consideration of those issues in subsequent licensing proceedings. In one example of such a rulemaking, the Commission made generic National Environmental Policy Act findings regarding the environmental impacts of the nuclear fuel cycle through an extensive rulemaking proceeding and precluded reconsideration of such findings during subsequent individual licensing proceedings. *See* 44 Fed. Reg. 45362 (Aug. 2, 1979). This approach was upheld by the U.S. Supreme Court in *Baltimore Gas & Electric v. NRDC*, 462 US 87 (1983).

Therefore, while the task force does not recommend that the Commission dispose of substantive policy issues in the pre-hearing Commission Order issued with the Notice of Hearing, the Commission could potentially consider resolving generic issues through rulemaking where appropriate. This would allow the Commission to decide generic issues with finality using its notice and comment rulemaking process, while preventing such generic issues from being re-examined in individual licensing hearings. In deciding whether to undertake such a rulemaking, the Commission should consider whether the issue in question is amenable to a meaningful generic resolution. In addition, the Commission should keep in mind that these rulemaking proceedings are likely to be controversial and – given the competing demands for staff resources that are expected over the coming year – may not be complete by the time the

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[5] *See* 10 CFR § 2.202 (Jan. 1, 2006).

[6] *See Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 733-39 (3rd Cir. 1989). While acknowledging the NRC's ability to exclude generic issues from consideration during administrative litigation by resolving such issues through rulemaking, the court held that the NRC's refusal to consider the environmental impacts of "Severe Accident Mitigation Design Alternatives" during administrative litigation on the basis of statements made in a Final Policy Statement was inappropriate. *Id*.

first new reactor licensing hearing begins.[7] Because of the complexities associated with Commission resolution of generic issues for combined licenses via pre-hearing orders, the task force has instead recommended that the Commission consider rulemaking to resolve these generic issues and has included this as additional recommendation (2) in Section 4.

[7]While completion of such rulemaking proceedings will be important in providing final resolution to generic issues, it should be noted that longstanding agency policy holds that Licensing Boards should not entertain contentions that are, or are about to become, the subject of a general rulemaking. *See Duke Energy Corp.* (Oconee Nuclear Station, Unites 1, 2 & 3), CLI-99-11, 49 NRC 328, 345 (1999)(citing cases).

ACKNOWLEDGMENTS

The task force would like to acknowledge the contributions of the various stakeholders who offered their time, shared their experiences, and offered suggestions for improvement of the new reactor license review process. The task force recognizes that without these contributions its review efforts would have been limited. As our nation embarks on a possible renaissance in nuclear power generation, the task force offers its gratitude to those stakeholders who provided their assistance in proffering recommendations to improve an important, complex, lengthy, untested process while fully recognizing the need to preserve the paramount focus on ensuring the health and safety of the public.