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THE UNITED STATES NUCLEAR REGULATORY COMMISSION'S USE OF SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEES

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ABSTRACT

The U.S. Nuclear Regulatory Commission's ongoing need for scientific and technical advisory committees has recently been highlighted by the continuing study of highly technical issues—the Fukushima disaster, the need to find an alternative to the essentially-defunct Yucca Mountain high-level waste repository, the Obama Administration's new initiative supporting development of small modular reactors, the newly-voiced concerns about nuclear plants' vulnerability to cyber-attack, and the NRC's conclusion that nuclear power reactors in the eastern and central United States are more vulnerable to earthquakes than previously thought. This article provides a survey of the NRC's advisory committees that now work, or have worked, on technical issues, and is intended to provide the NRC (and perhaps other scientific agencies) with information helpful in structuring and establishing new committees to address budding scientific and technical issues such as those listed above.

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I. INTRODUCTION

The United States Nuclear Regulatory Commission's (NRC) current and anticipated consideration of highly technical issues assures the continuing need for, and relevance of, advisory committees. This need and relevance have recently been highlighted by the continuing study of the Fukushima disaster,¹ the need to find an alternative to the essentially-defunct Yucca Mountain high-level waste repository,² the Obama Administration's new initiative supporting development of small

¹ See, e.g., International Atomic Energy Agency, Final Report of the International Mission on Remediation of Large Contaminated Areas Off-site the Fukushima Dai-ichi NPP (Oct. 7–15, 2011), *available at* <http://www.iaea.org/newscenter/news/2011/missionfinalreport.html> (stating that a fact-finding Mission was created in response to the Fukushima disaster at the request of the Japanese Government); Nuclear Regulatory Commission, Recommendations for Enhancing Reactor Safety in the 21st Century: The Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident (July 12, 2011) (ADAMS Accession No. ML111861807). ADAMS is the NRC's automated document retrieval system, *available at* <http://wba.nrc.gov:8080/wba/>. Information regarding how to use ADAMS can be found at <http://www.nrc.gov/reading-rm/adams.html>.

² See, e.g., BLUE RIBBON COMMISSION ON AMERICA'S NUCLEAR FUTURE, REPORT TO THE SECRETARY OF ENERGY, vi (Jan. 2012) (noting the need for a revised plan for the creation of a new high-level waste repository), *available at* http://brc.gov/sites/default/files/documents/brc_finalreport_jan2012.pdf.

modular reactors,³ the newly-voiced concerns about nuclear facilities' vulnerability to cyber-attacks⁴ and solar flares,⁵ and NRC's conclusion that nuclear power reactors in the eastern and central United States are more vulnerable to earthquakes than previously thought.⁶

Advisory committees have played, and continue to play, a major role in the NRC's analysis of scientific and technical

³ Yanmei Xie & Bill Freebairn, *US DOE Launches Major Funding Program for Small Nuclear Reactors*, PLATTS (Jan. 20, 2012), available at <http://www.platts.com/RSSFeedDetailedNews/RSSFeed/ElectricPower/3903791>.

⁴ See, e.g., Richard Brust, *CyberAttacks: Computer Warfare Looms as Next Big Conflict in International Law*, ABA JOURNAL (May 1, 2012, 5:10 AM):

Once [the Struxnet computer worm] grabs hold of the computer's mechanics, it sets out to destroy the system. First it wildly alters the rotational speed of the centrifuge motors, shifting them up and down. The fluctuations can blow the system apart. If a crash occurs when the centrifuges are packed with hot uranium-hexafluoride gas, the sabotage could end in catastrophe.

See also *Nuclear Regulator Warns About Cybersecurity Lapses at California Power Plant* (June 15, 2012), <http://www.infosecurity-magazine.com/view/26383/nuclear-regulator-warns-about-cybersecurity-lapses-at-california-power-plant/>; Nicole Blake Johnson, *Is DHS Ready to Oversee Private Cybersecurity?*, FEDERAL TIMES (Apr. 5, 2012), <http://www.federaltimes.com/article/20120405/IT01/204050306/> (although the nuclear power industry does not rely heavily on the internet, cyber security is still a concern because the internet "is used for emergency response purposes and to communicate with offsite organizations"); Prepared Remarks for Gregory B. Jaczko, Chairman U.S. N.R.C., *Nuclear Security in the New Threat Environment*, 2-4 (Apr. 4, 2012), available at <http://www.nrc.gov/reading-rm/doc-collections/commission/speeches/2012/s-12-007.pdf>; Lolita C. Baldor, *Bigger US Role Against Companies' Cyberthreats?*, WASHINGTON TIMES, Feb. 6, 2012, available at <http://www.washingtontimes.com/news/2012/feb/6/bigger-us-role-against-companies-cyberthreats/print/> ("Authorities are increasingly worried that cybercriminals are trying to take over systems that control the inner workings of . . . nuclear . . . power plants."); RENEW GRID, *Energy And Commerce Oversight Committee Holds Hearings On Smart Grid Security* (Mar. 1, 2012), http://www.renewgridmag.com/e107_plugins/content/content.php?content.8103 (referring to Stuxnet's and Slammer worm's ability to infect and attack nuclear facilities' computer systems).

⁵ See Margaret Ryan, *Solar Flares Endanger Nuclear Plants, Power Grids*, AOL ENERGY (June 19, 2012), <http://energy.aol.com/2012/06/19/solar-flares-endanger-nuclear-plants-power-grids/>.

⁶ See PROJECT PLAN: CENTRAL EASTERN UNITED STATES SEISMIC SOURCE CHARACTERIZATION FOR NUCLEAR FACILITIES, <http://www.ceus-ssc.com/Report/ProjectPlan.html> (discussing plan to reassess seismic hazard analysis in the Central Eastern U.S.); U.S. NUCLEAR REGULATORY COMMISSION, *News Release No. 12-010, New Seismic Model Will Refine Hazard Analysis at U.S. Nuclear Plants* (Jan. 31, 2012), <http://pbadupws.nrc.gov/docs/ML1203/ML120330098.pdf> (discussing safety procedures for nuclear plants in the event of an earthquake).

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issues.⁷ Even though the Commission⁸ and the NRC staff do not always follow the recommendations of the agency's advisory committees, the Commission and its staff have never failed to at least consider and address a relevant advisory committee's recommendations.⁹ The NRC currently has only three active advisory committees chartered under the Federal Advisory Committee Act (FACA)¹⁰ — the Advisory Committee on Reactor Safeguards (ACRS), the Advisory Committee on Medical Use of Isotopes (ACMUI), and the Licensing Support Network Advisory Review Panel (LSNARP).¹¹ The first two of these advisory committees are comprised of technical experts in fields directly related to nuclear regulation. The ACRS reports to and meets with both the Commission and the staff, while the ACMUI reports only to the NRC staff and generally meets with the Commission once each year.¹² The third committee is not comprised of technical experts but instead includes representatives of various constituencies with interests in the U.S. Department of Energy's High-Level Waste Repository adjudication.¹³ This article includes it, however, because it addresses issues of computer science (a technical field in its own right) and because it provides an informative counterpoint to the ACRS and the ACMUI. This committee reports only to the

⁷ See Interview with Dr. Andrew Bates, Comm. Mgmt. Officer, Nuclear Regulatory Comm'n (Oct. 27, 2011), *infra* Appendix A (discussing the functions of the various NRC advisory committees). Dr. Bates is the NRC's Advisory Committee Management Officer and, in that capacity, manages all of the NRC's FACA advisory committees.

⁸ This article follows the agency's own practice of using the word "Commission" when referring to the NRC Commissioners in their collective capacity as agency head. See, e.g., UNITED STATES NUCLEAR REGULATORY COMMISSION, *The Commission*, www.nrc.gov/about-nrc/organization/commfuncdesc.html (last updated July 11, 2012).

⁹ Interview with Andrew Bates, *supra* note 7.

¹⁰ See 5 U.S.C. app. 2 § 1 (2012) (referring to the short title of the FACA).

¹¹ Interview with Andrew Bates, *supra* note 7.

¹² E-mail from Andrew Bates, Comm. Mgmt. Officer, Nuclear Regulatory Comm'n, to Roland Frye (Dec. 8, 2011, 2:17 p.m.), *infra* Appendix B.

¹³ U.S. NUCLEAR REGULATORY COMM'N, CHARTER: LICENSING SUPPORT NETWORK ADVISORY REVIEW PANEL, para. 7 (Dec. 3, 2010) (ML103370153); U.S. Department of Energy (High-Level Waste Repository), NRC Docket No. 63-001-HLW (Yucca Mountain). See also Interview with Dan Graser, computer technology expert with the NRC's Atomic Safety and Licensing Board Panel, Nuclear Regulatory Comm'n (Oct. 11, 2011) (Interview with Dan Graser), *infra* Appendix A (explaining that the advisory committee to the Licensing Support System differs from the other advisory committees in that its membership is assigned by affiliation and not by expertise).

Atomic Safety and Licensing Board Panel.¹⁴

In addition to these three FACA committees, this article examines other advisory committees (FACA or otherwise) that previously reported to the Commission but that are now defunct, and still others that report (or reported) solely to the NRC staff. Finally, for purposes of completeness, this article describes one now-defunct pre-FACA advisory committee (the Advisory Committee of State Officials) that addressed the transfer of materials regulation responsibilities to the states, even though the committee only indirectly considered scientific or technical issues.¹⁵

Seven of the twelve committees described in this article were comprised of technical or scientific experts;¹⁶ the membership of the remaining five was determined by constituency rather than expertise.¹⁷ For each of the committees considered herein, this article includes (where available) information regarding the committee's status, lifespan, purposes, membership, whether it was chartered under FACA, the entity to whom it reports or reported, and its involvement (*vel non*) in rulemakings. These common data points should provide useful information to the NRC—or perhaps other Federal agencies—should they decide to create further advisory committees (FACA or otherwise). This article also draws significant distinctions between/among different advisory committees.

¹⁴ U.S. NUCLEAR REGULATORY COMM'N, CHARTER: LICENSING SUPPORT NETWORK ADVISORY REVIEW PANEL, *supra* note 13, at para. 5.

¹⁵ This article addresses only those NRC advisory committees that, at least to some degree, focus or focused their attention on scientific or technical issues. This has resulted in the exclusion of a plethora of non-technical advisory committees. *E.g.*, Advisory Committee for African Americans, Advisory Committee for Employees with Disabilities, Asian/Pacific American Advisory Committee, Diversity Advisory Committee on Ageism, Federal Women's Program Advisory Committee, Hispanic Employment Program Advisory Committee, and Native American Advisory Committee.

¹⁶ Those seven committees were/are the ACRS (*see infra* Part II.A), ACMUI (*see infra* Part II.B), ACNW (*see infra* Part III.A), the Nuclear Safety Research Review Committee (*see infra* Part III.E), Independent External Review Panel to Identify Vulnerabilities in the U.S. Nuclear Regulatory Commission's Material Licensing Program (*see infra* Part III.F), Peer Review Committee for Source Term Modeling (*see infra* Part III.G), and the Committee to Review Generic Requirements (CRGR) (*see infra* Part IV.A).

¹⁷ Those five committees were/are the LSNARP (*see infra* Part II.C), the Advisory Panel for the Decontamination of Three Mile Island, Unit 2 (*see infra* Part III.B), Pilot Program Evaluation Panel (*see infra* Part III.C), the Reactor Oversight Process Initial Implementation Evaluation Panel (*see infra* Part III.D), and the Advisory Committee of State Officials (*see infra* Part V.A).

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In the realm of *reactor* regulation, the Commission has for decades used the ACRS—a committee that, by its charter, reports directly to the Commission.¹⁸ By contrast, the Commission's use of advisory committees in the field of *materials* regulation has been for shorter time periods, or the Commission imposed no obligation on those advisory committees to report directly to the Commission.¹⁹ For instance, the Commission established the ACMUI in 1958 and provided that it report to the NRC staff.²⁰ The Commission created the Advisory Committee on Nuclear Waste (ACNW) in 1988 to address the regulation of radioactive materials, but rescinded the ACNW's charter in 2008.²¹ Subsequently, the Commission assigned the ACNW's duties to the ACRS.²²

In addition to using these three advisory committees to address materials licensing issues, the Commission has also used “working groups”²³ that can include outside experts (such as a medical advisor²⁴), the relevant NRC offices, and also the agreement states (i.e., those states that have signed agreements with the NRC to regulate certain uses of radioactive materials

¹⁸ See *infra* Part II.A. In the realm of reactor regulation, the Commission has also used the following FACA-chartered committees: the Advisory Panel for the Decontamination of Three Mile Island, Unit 2 (see *infra* Part III.B), the Pilot Program Evaluation Panel (see *infra* Part III.C), the Reactor Oversight Process Initial Implementation Evaluation Panel (see *infra* Part III.D).

¹⁹ See *infra* Part III.A (stating that the NRC rescinded the ACNW's charter in 2008, twenty years after its founding); see *infra* Part II.B (noting that the ACMUI generally reports to the Commission only upon the Commission's specific request).

²⁰ See *infra* Part II.B. In the realm of materials regulation, the Commission has also used the following FACA-chartered committees: the Independent External Review Panel to Identify Vulnerabilities in the U.S. Nuclear Regulatory Commission's Material Licensing Program (see *infra* Part III.F) and the Peer Review Committee for Source Term Modeling (see *infra* Part III.G). See also *infra* Part V.A, describing the non-FACA-chartered Advisory Committee of State Officials.

²¹ *Infra* Part III.A.

²² See U.S. NUCLEAR REGULATORY COMM'N, CHARTER: ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, at 2-3 (2011) (ML083460423) (“The ACRS shall report to and advise the Commission on issues associated with nuclear materials and waste management”). See also E-mail from Andrew Bates, *supra* note 12 (“ACRS Charter states that the committee reports to the Commission, yet under practice it writes its reports to the Commission and EDO”).

²³ See, e.g., *Source Material Jurisdictional Working Group*, U.S. NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/materials/src-materials-facilities/jurisdictional.html> (last updated Apr. 18, 2012) (describing the function of the Jurisdictional Working Group).

²⁴ See *infra* notes 101-05 and accompanying text.

within their borders according to the Commission's own standards).²⁵ "These working groups do not include licensees or public interest groups, though the working groups may determine to have public meetings to get comments in developing a rule and can share draft rule language with the public in order to facilitate the public meetings."²⁶

Further information on individual committees is available in the Commission's annual reports on each existing advisory committee, and may be found on the Commission's website (www.nrc.gov).²⁷ This article has also included the specific URL for the webpage of each committee that has one.

II. EXISTING ADVISORY COMMITTEES CHARTERED UNDER FACA

A. *Advisory Committee on Reactor Safeguards (ACRS)*

Congress established the ACRS in section 29 of the Atomic Energy Act of 1954, as amended (AEA).²⁸ It is comprised of a maximum of 15 members who are selected solely on the basis of their expertise.²⁹ In filling vacancies on the ACRS, the Commission looks for diversity of expertise in a wide range of relevant fields—e.g., fluid dynamics, heat and mass transfer, diesel generators, materials, civil engineering, chemical engineering, and health physics.³⁰ The ACRS also looks for members with actual plant operational experience and with the technical skills noted above.³¹ Another form of diversity on the ACRS stems from the fact that its membership is drawn "from academia, the national labs, and the regulated industry."³²

According to Trip Rothschild (one of the NRC's two Associate

²⁵ *Agreement States*, UNITED STATES NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/reading-rm/basic-ref/glossary/agreement-state.html> (last updated Mar. 29, 2012).

²⁶ Interview with Brad Jones, Assistant Gen. Counsel, Reactor and Materials Rulemaking & Geary Mizuno, Special Counsel, Reactor and Materials Rulemaking (Nov. 15, 2011), *infra* Appendix A.

²⁷ 10 C.F.R. § 7.17(a) (2012).

²⁸ 42 U.S.C. § 2039 (2012).

²⁹ *See id.* ("Advisory Committee on Reactor Safeguards consisting of a maximum of fifteen members."); Interview with Andrew Bates, *supra* note 7.

³⁰ Interview with Andrew Bates, *supra* note 7.

³¹ *Id.*

³² Interview with Andrew Bates, as subsequently revised by attachment to Dr. Bates's e-mail to Roland Frye (Dec. 6, 2011, 3:52 p.m.), *infra* Appendix B.

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General Counsel), the ACRS constitutes, in essence, a peer review body that examines the NRC staff's technical work.³³ According to Commission regulations the ACRS:

reviews and reports on safety studies and applications for construction permits and facility operating licenses;^[34] advises the Commission with regard to hazards of proposed or existing reactor facilities and the adequacy of proposed reactor safety standards; upon request of the Department of Energy (DOE), reviews and advises with regard to the hazards of DOE nuclear activities and facilities; reviews any generic issues or other matters referred to it by the Commission for advice . . . [and] conducts studies of reactor safety research and submits reports thereon to the U.S. Congress and the NRC as appropriate.³⁵

Regarding the first of these responsibilities, the ACRS reviews and reports on “[e]ach application for a construction permit or an operating license for a facility which is of a type described in [10 C.F.R.] § 50.21(b) or § 50.22, or for a testing facility.”³⁶ The ACRS also examines and reports on the safety issues associated with applications for (i) early approval of reactor site permits,³⁷ (ii) renewal of operating licenses for nuclear power plants,³⁸ (iii) initial approval, or renewal, of a license to manufacture nuclear power plants,³⁹ and (iv) combined licenses (to both construct and operate a regulated facility).⁴⁰

³³ Interview with Trip Rothschild, Associate General Counsel, Nuclear Regulatory Commission (Oct. 26, 2011), *infra* Appendix A.

³⁴ Although Dr. Bates does not believe that the ACRS's functions include the review of *research* reactor license applications, he is aware of no document explicitly addressing this issue one way or the other. Nor is he aware of any instance where the ACRS has actually undertaken such a review. He believes, however, that the ACRS could do so on its own initiative under Section 29 of the AEA as well as under 10 C.F.R. § 1.13, and that the Commission could ask it to do so under 10 C.F.R. §§ 2.102(b), (c). Interview with Andrew Bates, *supra* note 7.

³⁵ 10 C.F.R. § 1.13 (2012). Although the ACRS's responsibilities are directed primarily at power reactors, the committee also reviews nuclear waste issues. *Supra* text associated with note 23. In addition, the committee “considers the production of medical isotopes that are produced within a ‘power reactor’ that was created solely to create such isotopes.” Interview with Brad Jones & Geary Mizuno, *supra* note 26.

³⁶ 10 C.F.R. § 50.58(a) (2012). Section 50.21(b) concerns the manufacture of nuclear power reactors, and section 50.22 concerns certain production or utilization facilities.

³⁷ 10 C.F.R. Pt. 50, App. Q (2012); 10 C.F.R. § 52.23 (2012).

³⁸ 10 C.F.R. § 54.25 (2012).

³⁹ 10 C.F.R. §§ 52.165, 52.177 (2012).

⁴⁰ 10 C.F.R. § 52.87 (2012).

In performing each of the reviews mentioned in the preceding paragraph, the ACRS also examines the staff's documents that would approve, or would support a decision to approve, the application at issue.⁴¹ First, "the staff presents its documentation, underlying reasoning, and . . . conclusions to the advisory committee in subcommittee and full committee meetings."⁴² The advisory committee then reviews the documentation and then sends its own report back to the staff or Commission.⁴³

If the ACRS agrees with the Staff's proposed approval of the licensing action, the ACRS will issue an approval letter to the NRC staff, though often with recommended licensing conditions.⁴⁴ "The staff's current practice is to issue a written response to each of the advisory committee's recommendations (although this was not always the case)."⁴⁵

If a litigant seeks to challenge the application in a hearing before the Commission's trial-level adjudicatory body (the Atomic Safety and Licensing Board), the staff will submit the ACRS's letter to the Board.⁴⁶ "Dr. Bates is aware of no instance where the ACRS has withheld its approval of an operating license application or construction permit application that was supported by the staff."⁴⁷ But conversely, Dr. Bates reports several instances where staff did not adopt or agree with some of the ACRS's recommendations.⁴⁸ These disagreements between

⁴¹ Interview with Andrew Bates, *supra* note 7.

⁴² *Id.*

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ See 10 C.F.R. § 2.102(b)–(c) (2012) (stating that the ACRS must present its reports to the Commission, and that the staff must provide copies of the reports to State and local officials).

⁴⁷ Interview with Andrew Bates, *supra* note 7. See also J. SAMUEL WALKER, CONTAINING THE ATOM: NUCLEAR REGULATION IN A CHANGING ENVIRONMENT—1963-1971, at 80–81 (U. Cal. Press, 1992) (agreement regarding the 1966 proposal to locate a power reactor in Burlington, NJ). *But compare id.* at 89 (agreement same regarding a proposed site near Bodega Bay, CA) *with id.* at 98 (staff and ACRS later disagree regarding the same siting issue). To the extent the reader would like further background on the ACRS and other advisory committees, Dr. Walker's books on the NRC and its predecessor agency, the Atomic Energy Commission (AEC) are all good resources. Dr. Walker recently retired as the NRC's official resident historian after decades in that position. He is likely the single most knowledgeable individual on the history of the NRC and AEC.

⁴⁸ Interview with Andrew Bates, *supra* note 7.

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the staff and the ACRS did not occur in the adjudicatory context but instead concerned proposed rules, draft regulatory guidance documents, and proposed staff actions.⁴⁹

Tension between the staff and the ACRS has been longstanding. For instance, in 1959 the ACRS adamantly opposed a staff recommendation regarding general standards for locating nuclear power reactors in or near population centers.⁵⁰ Similarly, in 1965 the ACRS opposed a related general recommendation by the regulatory staff to prohibit the location of power reactors in metropolitan areas.⁵¹

Although the ACRS often communicates with and offers recommendations to the NRC staff, the agency's regulations provide specifically that it report directly to the Commission itself (i.e., the Commissioners),⁵² and indeed, pursuant to 10

⁴⁹ See, e.g., Letter from R. W. Borchardt, Executive Director for Operations, to Dr. Said Abdel-Khalik, Chairman, Advisory Committee on Reactor Safeguards, entitled "Response to the Advisory Committee on Reactor Safeguards Report on the Proposed Rulemaking to Introduce a Site-Specific Performance Assessment and Human Intrusion Analysis Requirement to 10 CFR Part 61" (RIN-3150-AI92) (Nov. 3, 2011) (ML112730300) (expressing disagreement with the ACRS recommendation for changes to a staff proposal); Memorandum from Said Abdel-Khalik, ACRS Chairman, to Gregory B. Jaczko, NRC Chairman, entitled "Proposed Rulemaking to Introduce a Site-Specific Performance Assessment and Human Intrusion Analysis Requirement to 10 CFR Part 61" (Sept. 22, 2011) (ML11256A191) (disagreeing with staff recommendation); Memorandum from Said Abdel-Khalik, ACRS Chairman, to Gregory B. Jaczko, NRC Chairman, entitled "Response to the June 8, 2011, EDO Letter Regarding Draft Final Revision 3 of Regulatory Guide (RG) 1.152, 'Criteria for Use of Computers in Safety Systems of Nuclear Power Plants'" (Aug. 11, 2011) (ML11199A149) (disagreeing with the staff's position); Memorandum from Said Abdel-Khalik, ACRS Chairman, to Mr. R.W. Borchardt, Executive Director for Operations, entitled "Topical Report NEDC-33173p, Supplement 2, Part 1, 2 and 3, 'Analysis of Gamma Scan Data and Removal of Safety Limit Minimum Critical Power Ratio (SLMCR) Margin'" (Aug. 11, 2011) (ML11199A114) (offering recommendations that differ from those of the staff). Cf. Memorandum from Said Abdel-Khalik, ACRS Chairman, to Mr. R.W. Borchardt, Executive Director for Operations, entitled "Draft Final Regulatory Guide (RG) 1.82, 'Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident,' Revision 4," at 2-3 (Oct. 17, 2011) (ML11284A157) (recommending changes to a draft RG); Memorandum from Said Abdel-Khalik, ACRS Chairman, to Gregory B. Jaczko, NRC Chairman, entitled "Initial ACRS Review of: (1) the NRC Near-Term Task Force Report on Fukushima and (2) Staff's Recommended Actions to be Taken Without Delay," at 2-10 (Oct. 13, 2011) (ML11284A136) (supplementing the staff report with ACRS' own recommendations).

⁵⁰ WALKER, *supra* note 47, at 58.

⁵¹ *Id.* at 76.

⁵² 10 C.F.R. § 1.11(c) (2012); Interview with Andrew Bates, *supra* note 7. See Technical Specifications, 60 Fed. Reg. 36,953 (1995) (discussing certain

C.F.R. § 1.11(c), the ACRS regularly makes oral presentations directly to the Commission.⁵³ The ACRS's final reports are generally directed to the Commission while interim reports and regulatory guidance reviews often go to the Executive Director for Operations (the person who administers all NRC technical offices).⁵⁴

The Commission takes the recommendations of this advisory committee into account when that committee recommends a rule change. This is explained in section 2.809(a) of the Commission's regulations:

In its advisory capacity to the Commission, the ACRS may recommend that the Commission initiate rulemaking in a particular area. The Commission will respond to such rulemaking recommendation in writing within 90 days, noting its intent to implement, study, or defer action on the recommendation. In the event the Commission decides not to accept or decides to defer action on the recommendation, it will give its reasons for doing so. Both the ACRS recommendation and the Commission's response will be made available at the NRC Web site, <http://www.nrc.gov>, following transmittal of the Commission's response to the ACRS.⁵⁵

Section 2.809(b) provides that, when the staff is preparing a rule involving nuclear safety matters within the purview of the ACRS, "the Staff will ensure that the ACRS is given an opportunity to provide advice at appropriate stages and to identify issues to be considered during rulemaking hearings."⁵⁶ The ACRS used to review rules at both the proposed and final

operational criteria set up by the Commission that must be met in order to comport with the operative standards under the Atomic Energy Act); Protection Against Malevolent Use of Vehicles at Nuclear Power Plants, 59 Fed. Reg. 38,889 (1994) (demonstrating a specific instance where the ACRS and NRC staff communicated directly); Acceptability of Plant Performance for Severe Accidents; Scope of Consideration in Safety Regulations, 57 Fed. Reg. 44,513 (1992) (discussing written communication between the Commissioner and ARCS).

⁵³ See, e.g., Nuclear Energy Institute, Receipt of a Petition for Rulemaking, 60 Fed. Reg. 29,784 (1995) (to be codified at 10 C.F.R. pt. 50) ("[T]he Advisory Committee on Reactor Safeguards has briefed the Commission on the development of performance-based approaches to fire protection at nuclear power plants in the United Kingdom and Canada").

⁵⁴ Interview with Andrew Bates, *supra* note 7 (stating the ACRS reviews every draft and final Regulatory Guides addressing reactor regulation).

⁵⁵ 10 C.F.R. § 2.809(a) (2012). See also Interview with Andrew Bates, *supra* note 7 (describing the current practice of the Commission's staff to issue written responses to each recommendation by the ACRS).

⁵⁶ 10 C.F.R. § 2.809(b) (2012).

stages.⁵⁷ But to promote efficiency, they are now given a second option of reviewing the proposed rule and are later sent the final rule for optional review.⁵⁸ In instances where the proposed rule involves significant technical issues, the ACRS may choose to conduct a thorough review and provide detailed comments to the staff at the proposed rule stage; or it may instead indicate a desire to conduct its review only after the staff has received and considered public comment in the final rule stage.⁵⁹ Like all other advisory committees at the Commission, ACRS does not formally initiate rulemakings on its own; at most, it will recommend that the Commission initiate a rulemaking.⁶⁰ Given that the ACRS regularly reports to the Commission and holds annual meetings with the Commission, the committee has ample opportunity to informally suggest the promulgation of new or revised rules and to comment on rules that already under development.⁶¹

Two more of the ACRS's responsibilities deserve at least brief mention. The Commission has indicated that it expects the ACRS to "play a significant role in reviewing proposed advanced reactor design concepts and supporting activities."⁶² In this regard, the ACRS prepares a report for the Commission on each application for initial approval, or renewal, of a reactor design certification.⁶³ Finally, the ACRS may, on its own initiative, "conduct reviews of specific generic matters or nuclear facility safety-related items."⁶⁴

Further information about the ACRS is available at the Committee's website.⁶⁵

B. Advisory Committee on Medical Uses of Isotopes (ACMUI)

The Atomic Energy Commission created this advisory

⁵⁷ Interview with Brad Jones & Geary Mizuno, *supra* note 26.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ Interview with Dr. Andrew Bates, *supra* note 7; *see also* 10 C.F.R. § 2.809(a) (2012) (describing the process of committee recommendation and Commission response).

⁶¹ Interview with Brad Jones & Geary Mizuno, *supra*, note 26.

⁶² Regulation of Advanced Nuclear Power Plants; Statement of Policy, 51 Fed. Reg. 24,643, 24,645 (July 8, 1986). *See also* 10 C.F.R. §§ 52.53, 52.131, 52.141 (2012) (regarding standard design certifications).

⁶³ 10 C.F.R. §§ 52.53, 52.54, 52.57 (2012).

⁶⁴ 10 C.F.R. § 1.13 (2012). This is in addition to its responsibility to examine these same kinds of issues when the Commission requests it to do so.

⁶⁵ *Advisory Committee on Reactor Safeguards*, U.S. NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/about-nrc/regulatory/advisory/acrs.html> (last updated June 22, 2012).

committee in July 1958.⁶⁶ Section 1.19(a) of the Commission's regulations provides that the committee consider medical questions that the Commission or the staff refers to it.⁶⁷ When requested, it offers expert opinions to the Commission on matters involving medical uses of radioisotopes, and likewise advises the NRC staff (specifically, the Office of Federal and State Materials and Environmental Management Programs (FSME))⁶⁸ on policy issues regarding the "licensing of medical uses of radioisotopes."⁶⁹ The ACMUI does not, however, offer advice regarding the production aspect of medical isotopes.⁷⁰ The ACMUI generally addresses its reports to the FSME Director, unless the Commission itself has directly asked the committee for input (which has happened).⁷¹ Dr. Bates is, however, uncertain whether

⁶⁶ 10 C.F.R. § 1.19(a) (2012).

⁶⁷ *Id.*; see also Interview with Andrew Bates, *supra* note 7 ("[E]arly in its existence, [the] ACMUI served as a pool of individual advisors to NMSS. In the late 1980s, [the General Services Administration] nearly shut [the] ACMUI down for this reason").

⁶⁸ 10 C.F.R. § 1.19(a) (2012); Interview with Andrew Bates, *supra* note 7.

⁶⁹ 10 C.F.R. § 1.19(a) (2012); see also *Advisory Committee on the Medical Uses of Isotopes*, U.S. NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/about-nrc/regulatory/advisory/acmui.html> (explaining the functions of the ACMUI). Although most of ACMUI's responses are written, it will occasionally issue oral recommendations. Interview with Andrew Bates, *supra* note 7.

The ACMUI's charter makes no mention of the committee's responsibility to advise the Commission itself on these matters:

"The Committee provides advice, as requested by the Director, Division of Materials Safety and State Agreements (MSSA), Office of Federal and State Materials and Environmental Management Programs (FSME), on policy and technical issues that arise in regulating the medical use of byproduct material for diagnosis and therapy. The Committee may provide consulting services as requested by the Director, MSSA."

U.S. NUCLEAR REGULATORY COMM'N, CHARTER: ADVISORY COMMITTEE FOR THE MEDICAL USES OF ISOTOPES, 1 (2010), <http://www.nrc.gov/about-nrc/regulatory/advisory/acmui/charter.html>. Despite this omission, the ACMUI does occasionally brief the Commission directly. The ACMUI generally meets with Commission once a year. Interview with Andrew Bates, *supra* note 7.

Regarding the medical administration of radioactive material and radiation from radioactive material, *e.g.*, Criteria for the Release of Individuals Administered Radioactive Material, 62 Fed. Reg. 4120, 4126 (Jan. 29, 1997); Medical Administration of Radiation and Radioactive Materials, 60 Fed. Reg. 48,623, 48,623 (Sept. 20, 1995); Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use, 59 Fed. Reg. 61,767, 61,769 (Dec. 2, 1994); Medical Use of Byproduct Material, 63 Fed. Reg. 43,516, 43,550 (Aug. 13, 1998) (proposed rule).

⁷⁰ Interview with Brad Jones & Geary Mizuno, *supra* note 26. This responsibility resides with the ACRS, *supra* note 35.

⁷¹ Interview with Andrew Bates, *supra* note 7; Interview with Brad Jones & Geary Mizuno, *supra* note 26.

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the ACMUI currently reviews all proposed and final rules that are relevant to its charter, or instead reviews only those that the staff sends the advisory committee.⁷²

Like the ACRS, the ACMUI has a selection panel to recommend new members.⁷³ At one time, the Commission itself made the appointments.⁷⁴ But today, the Director of FSME makes the selection decisions, although the Director does notify the Commission before any appointments are final.⁷⁵ All members of the ACMUI come from outside the Commission and all are involved, directly or indirectly, in one facet or another of nuclear medicine.⁷⁶

Although the Commission's regulations provide that the ACMUI is to be composed of physicians and scientists,⁷⁷ the committee's membership has actually spanned a far broader range of expertise.⁷⁸ The current committee is composed of the following:

[A] nuclear medicine physician; a nuclear cardiologist; a medical physicist in nuclear medicine unsealed byproduct material; a medical physicist in radiation therapy; a radiation safety officer; a nuclear pharmacist; two radiation oncologists; a patients' rights advocate; a Food and Drug Administration representative; an Agreement State representative; a health care administrator; and a diagnostic radiologist.⁷⁹

This breadth of membership is hardly new. For instance, in 1994 the advisory committee was similarly comprised of "physicians (i.e., in nuclear medicine, cardiology, and radiation oncology), medical physicists, pharmacists, medical researchers, practicing technologists, hospital administrators, state medical regulators, Food and Drug Administration representatives, and a patient rights representative."⁸⁰

The ACMUI's role has remained largely the same over the

⁷² Interview with Andrew Bates, *supra* note 7.

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ 10 C.F.R. § 1.19(a) (2012).

⁷⁸ See *ACMUI Membership*, U.S. NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/about-nrc/regulatory/advisory/acmui/membership.html> (last updated Mar. 29, 2012) (listing the current members of the ACMUI and their occupations).

⁷⁹ *Id.*

⁸⁰ Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use, 59 Fed. Reg. 61,767, 61,769 (Dec. 2, 1994).

years. The following excerpt from a 1998 Notice of Proposed Rulemaking gives a sense of the kinds of issues addressed by the ACMUI:

The ACMUI . . . discussed training and experience for authorized users, authorized medical physicists, authorized nuclear pharmacists, and Radiation Safety Officers The ACMUI agreed with the Commission's proposed general approach to training and experience, i.e., delete reference in the rule to the speciality boards names, require preceptor forms, and require that competency be demonstrated by successful completion of an examination

The ACMUI unanimously recommended that the current training requirements for authorized users of sealed sources and devices for therapeutic applications . . . be maintained. Specifically, they recommended retaining the 3-year clinical training in an accredited program as an alternative to medical speciality board certification [as well as] . . . the current requirements for authorized users of brachytherapy and therapeutic medical devices. . . .

The ACMUI unanimously recommended that the training requirements for authorized users of unsealed byproduct material for diagnostic uses . . . be reduced to the levels proposed by the NRC staff The ACMUI did not reach a consensus on the training requirements for authorized users of unsealed byproduct material for therapeutic uses. Finally, they unanimously agreed with NRC staff's recommendation for training requirements for authorized nuclear pharmacists (700 hours in a structured educational program) and medical physicists (Masters of Science degree and 2 years).⁸¹

Like the ACRS, the ACMUI engages the staff in give-and-take exchanges of ideas regarding draft regulations that the staff has prepared.⁸² The ACMUI receives from FSME an informational copy of any proposed rule within its purview; it likewise has an opportunity to comment on any final rule within its purview before it is forwarded to the Commission for approval.⁸³ Mr. Jones (Assistant General Counsel for Reactor and Materials Rulemaking) "does not recall any instance where a rule involving

⁸¹ Medical Use of Byproduct Material; Proposed Revision, 63 Fed. Reg. 43,516, 43,520 (Aug. 13, 1998) (proposed rule).

⁸² See Criteria for the Release of Individuals Administered Radioactive Material, 62 Fed. Reg. 4120, 4129 (Jan. 29, 1997) (describing the exchange of ideas).

⁸³ Interview with Brad Jones & Geary Mizuno, *supra* note 26.

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medical treatment was not reviewed by the ACMUI.”⁸⁴ In addition, the committee can recommend that the staff initiate a rulemaking.⁸⁵ If the ACMUI writes a letter regarding a proposed rulemaking, the letter would be addressed to FSME.⁸⁶ If FSME agrees with the ACMUI's comments, then FSME would send up a “SECY Paper” (an internal memorandum from the staff to the Commission) requesting that the Commission add the proposed rulemaking to the Commission's list of potential rules.⁸⁷

Although the staff and ultimately the Commission often adopt the recommendations of the ACMUI,⁸⁸ they do not always do so. For instance, simultaneous with the issuance of the 1998 Notice of Proposed Rulemaking,⁸⁹ the staff issued a Draft Policy Statement rejecting the “regulation of the medical use of byproduct material on the basis of ‘comparable risk,’ as the ACMUI . . . ha[d] proposed.”⁹⁰ The staff reasoned that ACMUI's “comparable risk” approach would not satisfy the requirement imposed by Section 161b of the Atomic Energy Act that the Commission regulates all uses of byproduct material “to protect

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*; Regarding SECY Papers, see *Commission Direction-Setting and Policymaking Activities*, U. S. NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/about-nrc/policymaking.html> (last updated Oct. 3, 2012).

⁸⁸ Quality Management Program and Misadministrations, NRC Override of OMB Disapproval of NRC Information Collection Request, 57 Fed. Reg. 41,376 (Sept. 10, 1992) (responding in part to the ACMUI's recommendations, the Commission “reexamined its approach and published a second proposed rule”); Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use, 60 Fed. Reg. 322, 323 (Jan. 4, 1995) (adopting ACMUI's opinion that it is unnecessary to require certain information on a label); Medical Use of Byproduct Material; Training and Experience Criteria, 57 Fed. Reg. 46,522, 46,523 (Oct. 9, 1992) (requesting public comment and considering it along with the comments of the ACMUI); see, e.g., Criteria for the Release of Individuals Administered Radioactive Material, 62 Fed. Reg. 4120, 4125, 4130 (Jan. 29, 1997) (showing that the Commission adopted ACMUI's recommendation to provide written instructions to patients and based a decision to delete a requirement on the ACMUI's recommendation); cf. Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use, 58 Fed. Reg. 33,396, 33,405 (June 17, 1993) (following recommendations of the ACMUI).

⁸⁹ *Supra* text associated with note 81.

⁹⁰ Medical Use of Byproduct Material, Draft Policy Statement, 63 Fed. Reg. 43,580, 43,583 (Aug. 13, 1998); see also Criteria for the Release of Individuals Administered Radioactive Material, 62 Fed. Reg. 4120, 4129 (Jan. 29, 1997) (accepting all but one of the ACMUI's comments).

health and minimize danger to life.⁹¹ In another instance, the staff declined to follow the ACMUI's recommendation that the patient release criteria in 10 C.F.R. § 35.75 be expressed as a dose-based rather than an activity-based limit.⁹² As a final example, despite the ACMUI's conclusion that standard medical practice rendered a particular kind of regulation unnecessary, the staff nonetheless sought public comment on that same issue.⁹³

On occasion, the NRC staff will ask the ACMUI to look into a particular issue.⁹⁴ One recent example involved the use of cesium to sterilize blood; the staff asked the ACMUI to look at the National Academy of Sciences study on that issue.⁹⁵ But it appears that, at least as far back as 2007, the Commission itself has not lodged requests directly with the ACMUI but has instead directed the staff to consult that committee.⁹⁶

Further information on this committee is available at its website.⁹⁷

As an aside, the NRC some years ago established a Visiting Medical Fellows program that allows selected physicians or pharmacists to work for NRC for a period of one to two years.⁹⁸ Like the ACMUI, the Visiting Medical Fellows program has yielded advice to the staff during rulemakings.⁹⁹ In at least one instance, the fellow's advice played a role in the Commission's decision to delete a medical recordkeeping requirement.¹⁰⁰

⁹¹ Medical Use of Byproduct Material, 63 Fed. Reg. 43,583–84.

⁹² See Criteria for the Release of Patients Administered Radioactive Material, 59 Fed. Reg. 30,724, 30,728 (June 15, 1994) (rejecting ACMUI's recommendation as it was based on the demonstrability of compliance rather than the public's health and safety).

⁹³ Medical Administration of Radiation and Radioactive Materials, 60 Fed. Reg. 4872, 4875 (Jan. 25, 1995).

⁹⁴ E-mail from Andrew Bates, *supra* note 12.

⁹⁵ Interview with Brad Jones & Geary Mizuno, *supra* note 26.

⁹⁶ E-mail from Andrew Bates, *supra* note 12.

⁹⁷ *Advisory Committee on the Medical Uses of Isotopes*, U. S. NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/about-nrc/regulatory/advisory/acmui.html> (last updated July 5, 2012).

⁹⁸ Criteria for the Release of Individuals Administered Radioactive Material, 62 Fed. Reg. 4120, 4125 (Jan. 29, 1997); Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use, 59 Fed. Reg. 61,767, 61,769 (Dec. 2, 1994).

⁹⁹ Criteria for the Release of Individuals Administered Radioactive Material, 62 Fed. Reg. at 4125.

¹⁰⁰ See *id.* at 4130 (“Upon reconsideration, based on public comments and consultation with the ACMUI, an NRC medical consultant, and the NRC Visiting Medical Fellow, the NRC has decided to delete this requirement.”).

Although NRC documents have alluded to the Visiting Medical Fellow position as recently as 2010,¹⁰¹ the last clear indication that the position still existed occurred in 1998, in a memorandum written by the person then holding the fellowship.¹⁰²

*C. Licensing Support Network Advisory
Review Panel (LSNARP or Panel)*

Section 1.19(d) of the Commission's regulations explains that the Commission established the predecessor to this Panel¹⁰³ in 1989, pursuant to 10 C.F.R. § 2.1011(e); the predecessor was reconstituted and renamed in 1998.¹⁰⁴ Both the LSNARP and its predecessor "stemmed from a negotiated rulemaking [for 10 C.F.R. Part 2, Subpart J (regarding the *Yucca Mountain* proceeding)] and originally focused on a licensing support network that would have been based on a mainframe computer; later, [due to technological advances,] the focus shifted to a web-based system."¹⁰⁵ Although a Commission advisory document states that the Commission directed that the LSNARP be absorbed into the ACRS around 2004-05,¹⁰⁶ Dr. Bates explains

¹⁰¹ See Comments Received from NRC Counsel Concerning ACMUI Patient Release Report (Dec. 20, 2010) (ML003692456) (mentioning the title "Visiting Medical Fellow," suggesting its existence at this time).

¹⁰² See Memorandum to L. Joseph Callan, Executive Director for Operations, from Myron Polycove, Visiting Medical Fellow on Distribution of Potassium Iodide to Block Thyroid Uptake of Iodine-131 Accidental Release (Sept. 3, 1998), *appended to* Letter from William D. Travers, Executive Director for Operations, Nuclear Regulatory Commission, to Peter G. Crane (Mar. 3, 2000) (indicating Myron Polycove's title as Visiting Medical Fellow).

¹⁰³ The predecessor was the Licensing Support System Advisory Committee (LSSAC). See 10 C.F.R. § 2.1011(c)(2) (2012); Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository, 63 Fed. Reg. 71,729, 71,739 (Dec. 30, 1998) (promulgating 10 C.F.R. § 2.1011(d)). See also 10 C.F.R. § 1.19(d) (2012) (providing the Panel's establishment information and function); 10 C.F.R. § 2.1101(e) (outlining the Panel's duties and responsibilities). Although the current body has been called the Licensing Support Network Advisory Review *Board*, its proper name ends instead in the word "Panel." 10 C.F.R. § 2.1011(c) (2012). See Interview with Andrew Bates, *supra* note 7 (referring to it as a "Panel").

¹⁰⁴ 10 C.F.R. § 1.19(d) (2012); Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository, 63 Fed. Reg. 71,729, 71,730 (Dec. 30, 1998).

¹⁰⁵ Interview with Andrew Bates, *supra* note 7; See Interview with Dan Graser, *supra* note 13 (explaining technological advances and "Subpart J").

¹⁰⁶ See Letter from Graham B. Wallis, Chairman, N.R.C. Advisory Comm. on Reactor Safeguards, to Hon. Nils J. Diaz, Chairman, N.R.C. (Jul. 15, 2005), *in* N.R.C., 27 NUREG-112589, 2005 ANN. COMPILATION OF REPORTS OF THE

that the guidance document is incorrect, that the Panel is still alive (though in a coma) and finally, that although the Panel was rechartered under FACA in 2010, it has held no meetings since 2005.¹⁰⁷ It has, according to Dr. Bates, been kept on life-support “simply to allow for the possibilities that DOE could either revive its Yucca Mountain petition or present the Commission with another petition for a different high-level waste disposal repository.”¹⁰⁸

The Panel is, in fact, an “advisory committee” chartered under FACA,¹⁰⁹ even though it was not talismanically so designated by the use those two specific words.¹¹⁰ The Panel “provide[d] advice to the Commission on the design, development, and operation of the Licensing Support Network (LSN) an electronic information management system for use in the Commission’s high-level radioactive waste (HLW) licensing proceeding.”¹¹¹ More specifically, the Panel’s purpose was to “arriv[e] at standards and procedures to facilitate the electronic access to documentary material and to the electronic docket established for the HLW geologic repository licensing proceeding.”¹¹²

In 1998, the Commission announced that it expected the Panel to “be very useful in discussing standards and procedures to ensure that all participants are able to access the electronic information.”¹¹³ It was comprised of members who represented the parties and potential parties to the NRC’s high-level waste proceeding; it also included certain “Federal agencies with

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (2006) (ML061780504) (suggesting ACRS replaced the Nuclear Safety Review Committee as directed by the Commission.”). The NRC staff’s NUREGs are guidance documents.

¹⁰⁷ Interview with Andrew Bates, *supra* note 7; E-mail from Andrew Bates to Roland Frye (Nov. 1, 2011, 4:39 p.m.), *infra* Appendix B.

¹⁰⁸ Interview with Andrew Bates, *supra* note 7.

¹⁰⁹ *Id.*

¹¹⁰ *See* 10 C.F.R. § 2.1011(d) (2012) (“The Secretary of the Commission shall have the authority to appoint additional representatives to the LSN Advisory Review Panel consistent with the requirements of the Federal Advisory Committee Act”).

¹¹¹ 10 C.F.R. § 1.19(d) (2012).

¹¹² Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository, 63 Fed. Reg. at 71,734; *see also* 10 C.F.R. § 2.1011(e) (2012) (describing the duties of the Panel).

¹¹³ Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository, 63 Fed. Reg. at 71,734.

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expertise in large-scale electronic information systems.”¹¹⁴

Given that the Yucca Mountain High-Level Waste Repository is currently on life support and given further that the Panel has not met for six years, its survival appears highly doubtful.¹¹⁵ Based on the comments of Dan Graser, the manager of the LSN, as summarized at length below, I would conclude that he agrees.¹¹⁶

The LSSAC, and later the LSNARP, differ from NRC's other two existing advisory committees in four respects.¹¹⁷ The Panel was created to address issues of computer science rather than pure science or engineering.¹¹⁸ “[I]t has a very narrow focus to oversee and implement a negotiated rulemaking—i.e., the building of a shared documentary database.”¹¹⁹ It has been assigned a specific task/project rather than more general tasks.¹²⁰ And its membership was selected on the basis of affiliation (constituency) rather than expertise.¹²¹

When established in 1989 (at the time 10 C.F.R. Part 2, Subpart J was promulgated), “the public’ was not really viewed as a constituency, because the public did not have a stake in the design and use of the database.”¹²² In fact, most of the LSSAC members “thought of public access as a mere side benefit.”¹²³ The LSSAC's “membership reflected the interests of a very narrowly defined set of constituencies.”¹²⁴ Because the Committee stemmed from a negotiated rulemaking process, some of the parties to that rulemaking (e.g., Nye County) were assigned seats on the Committee.¹²⁵ At first, “a single county was designated to

¹¹⁴ 10 C.F.R. § 1.19(d) (2012).

¹¹⁵ See Interview with Andrew Bates, *supra* note 7 (implying that the continuation of the Panel is unlikely as it has not met in six years).

¹¹⁶ See Interview with Dan Graser, *supra* note 13 (stating that the Panel “became irrelevant”).

¹¹⁷ *Id.*

¹¹⁸ See 10 C.F.R. § 1.19(d) (2012) (“The LSNARP provides advice to the Commission on the design, development, and operation of the Licensing Support Network (LSN) an electronic information management system”); 10 C.F.R. § 2.1101(e) (“The LSN Advisory Review Panel shall provide advice to . . . NRC on the fundamental issues of the type of computer science necessary to access the Licensing Support Network effectively”).

¹¹⁹ Interview with Dan Graser, *supra* note 13.

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ Interview with Dan Graser, *supra* note 13.

represent the interests of all Nevada counties other than Nye, but this was later changed to allow each county a representative.”¹²⁶ Other members included private attorneys who were experienced practitioners before the NRC, several Nevada county commissioners, an arbitrator, and a litigation support expert.¹²⁷ Eventually, a public interest group—the Nevada Nuclear Waste Task Force—joined the LSSAC, but not until the sixth or seventh year of the Committee’s life.¹²⁸

As the description above indicates, LSSAC “membership was assigned by affiliation, not [computer or other] expertise.”¹²⁹ At the time, only a few people understood large databases or, later, the worldwide web, and no one at the time knew how to build huge litigation support databases.¹³⁰ Committee members that needed computer expertise had to find it either “from within their own organizations or from sources other than the LSSAC or, later, the LSNARP.”¹³¹

As Mr. Graser aptly describes it, the LSSAC:

[P]hilosophically reflected a distrust of both the DOE and the NRC; many of its members thought that, unless a computerized document system were designed by an independent advisory committee, the DOE and the NRC would [structure the system so as to] place other entities at a disadvantage. The environmentalists opted out of the negotiated rulemaking, but the other stakeholders stayed in and ultimately [became members of the LSSAC] when it was created by regulation in 1989.¹³²

The LSSAC members and, later, the Panel members were not at all involved in any subsequent rulemakings, including the 1998 rulemaking mentioned above.¹³³ And, although some Panel “members may have been involved in the 3.69 guidelines for review of the Yucca Mountain application,¹³⁴ the [Panel] itself was not.”¹³⁵

During their active phase, the LSSAC and the Panel were

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ *Id.*; E-mail from Andrew Bates, *supra* note 12.

¹²⁹ Interview with Dan Graser, *supra* note 13.

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*; U.S.N.R.C., Office of Nuclear Regulatory Research, Regulatory Guide 3.69, Topical Guidelines for the Licensing Support Network (Rev. 1, June 2004) (ML041770135).

¹³⁵ Interview with Dan Graser, *supra* note 13.

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“useful in developing consensus.”¹³⁶ They did not themselves directly address technical issues. Those responsibilities fell instead to smaller technical working groups¹³⁷ that the LSSAC or the Panel appointed.¹³⁸ As Mr. Graser explains,

The full Committee or Panel always adopted the technical working groups' recommendations in their entirety. The technical working groups (of which there were three or four) would work on projects such as the bibliographical header design that formed the basis for searches. One such group created three different design approaches that were consistent with worldwide web (then new). The technical working groups formulated the functional requirements that, in effect, said: “this is [the kind of database and search engine] we intend to buy and these are the criteria that you, the contractor, must use in developing [this] product.” The technical working groups were the foundation of all the accomplishments of the full Advisory Committee and, later, the full Panel.

The Commission stopped using the Panel around 2004-05—the same time the NRC appointed the pre-adjudication presiding officer (PAPO).¹³⁹ The Panel's Administrator (Dan Graser) would report mainly to the PAPO and the construction authorization board (one of the Licensing Board's adjudicatory panels responsible for managing the pre-adjudicatory portion of the *Yucca Mountain* proceeding).¹⁴⁰ Because a PAPO order would trump any recommendations from the Panel, the latter became irrelevant.¹⁴¹

Prior to the appointment of the PAPO, the Commission and staff had always followed the LSSAC's and Panel's recommendations¹⁴² because the LSSAC and the Panel always “did exactly what they were chartered to do,”¹⁴³ i.e., “they gave statistics and recommendations to the Commission. After a review, the Commission would direct Mr. Graser to “make the . . . recommendation[s] happen . . . [and] Mr. Graser would give the Commission a request for the necessary resources to do so—

¹³⁶ *Id.*

¹³⁷ These working groups are not to be confused with those to which this article refers in notes 23–26, *supra*.

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ Interview with Dan Graser, *supra* note 13.

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*

resources which the Commission always authorized.”¹⁴⁴

Finally, a few words regarding the meetings of the LSSAC and the Panel. During the Committee’s and Panel’s active phase, the Commission published notices in the *Federal Register*, announcing the committee’s or Panel’s public meetings.¹⁴⁵ These meetings were always open to the public, with open microphone sessions for public comments at end of each meeting.¹⁴⁶ They were held in either Washington DC or Nevada, with the single exception being a meeting in Wisconsin.¹⁴⁷ Few if any documents were marked pre-deliberative.¹⁴⁸

There appears to have been only one instance in which information was withheld from the public. This instance involved the awarding of the first contract in October 2000.¹⁴⁹ The initial award was successfully challenged. At the January 2001 meeting, Mr. Graser informed the Panel that the project would be delayed for three months, but he offered only the most general description of the reasons.¹⁵⁰ He did this because, at the time, the successor contract was susceptible to protest. Given that the reasons for the delay were procurement-sensitive, Mr. Graser kept his remarks quite general in order to avoid a second protest.¹⁵¹

More specifically, Mr. Graser provided the Panel and the public with only such information as was available in the contract award document. He provided no commercially privileged information such as “the percentage discount that the successful bidder was offering the NRC over other similar contracts.”¹⁵²

Each meeting was transcribed, and the NRC then placed those transcripts in its public records system and the Public Documents Room.¹⁵³ At the time, this was the standard governmental approach to achieving transparency.¹⁵⁴ In addition, from the Panel’s inception in 1998 until its final meeting in 2005, John Hoyle (the LSNARP Chairman) would prepare a two-page

¹⁴⁴ *Id.* (emphasis omitted).

¹⁴⁵ *Id.*

¹⁴⁶ Interview with Dan Graser, *supra* note 13.

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ Interview with Dan Graser, *supra* note 13.

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

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summary of each meeting and provide it both within the NRC and to the Panel's voting members.¹⁵⁵ Mr. Graser observes that "the contents of the . . . meetings [were] difficult for outsiders to follow because of the esoteric nature of the databases, the worldwide web and the administrative procedural rules; so most of the public attendees would not have had any idea what the members were discussing."¹⁵⁶

¹⁵⁵ *Id.*

¹⁵⁶ Interview with Dan Graser, *supra* note 13.

III. DEFUNCT ADVISORY COMMITTEES CHARTERED UNDER FACA

A. Advisory Committee on Nuclear Waste (ACNW), a/k/a Advisory Committee on Nuclear Waste and Materials (ACNW&M).

This committee, which is now defunct, had a twenty-year lifespan—it was chartered under FACA in 1988, initially consisted of members who had been assigned from the ACRS, and was dissolved in 2008 when the Commission merged this committee back into the ACRS.¹⁵⁷ During its existence, the ACNW was required by regulation to report directly to the Commission,¹⁵⁸ although it also advised the NRC staff. Specifically, this advisory committee counseled the Commission on all aspects of nuclear waste management that fell within the NRC’s regulatory responsibilities.¹⁵⁹ The ACNW played “a significant role in the review and resolution of key technical issues associated with the safe disposal of radioactive waste,”¹⁶⁰ and the Commission often followed the ACNW’s recommendations.¹⁶¹

Although the ACNW’s primary focus was on waste disposal, it also considered “other aspects of nuclear waste management such as handling, processing, transportation, storage, and safeguarding of nuclear wastes including spent fuel, nuclear wastes mixed with other hazardous substances, and uranium mill tailings.”¹⁶² The advisory committee “examine[d] and report[ed] on specific areas of concern referred to it by the Commission or designated representatives of the Commission,

¹⁵⁷ *Advisory Committee on Nuclear Waste and Materials, Schedules and Agendas*, U.S. NUCLEAR REGULATORY COMM’N, <http://www.nrc.gov/reading-rm/doc-collections/acnw/agenda/> (last updated Mar. 29, 2012); *ACNW&M History*, U.S. NUCLEAR REGULATORY COMM’N, <http://www.nrc.gov/reading-rm/doc-collections/acnw/history.html> (last updated Mar. 29, 2012) [hereinafter *ACNW&M History*]; Interview with Andrew Bates, *supra* note 7.

¹⁵⁸ 10 C.F.R. § 1.11(c) (2012).

¹⁵⁹ 10 C.F.R. § 1.18 (2012).

¹⁶⁰ *ACNW&M History*, *supra* note 158.

¹⁶¹ *See generally* Radiological Criteria for License Termination, 62 Fed. Reg. 39,058, 39,063-64 (July 21, 1997) (demonstrating an instance where ACNW’s recommendations were taken into consideration).

¹⁶² 10 C.F.R. § 1.18 (2012).

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and undertook studies and activities on its own initiative as appropriate to carry out its responsibilities.”¹⁶³ The ACNW was similar to the ACRS in that it “reviewed the agency’s proposed and final rules that were relevant to its charter.”¹⁶⁴ Finally, in fulfilling its responsibilities, the ACNW “interact[ed] with representatives of NRC, other Federal agencies, state and local governments, Indian Tribes, and private organizations.”¹⁶⁵

Further information about this committee is available on its website.

*B. Advisory Panel for the Decontamination
of Three Mile Island, Unit 2.*

The Commission established this committee in October 1980 under FACA, for the purposes of “obtain[ing] input and views from the residents of the Three Mile Island area[,] . . . afford[ing] Pennsylvania government officials an opportunity to participate in the Commission’s decisional process regarding cleanup for Three Mile Island, Unit 2,”¹⁶⁶ and “provid[ing] independent advice from local officials, scientists and individuals in the area.”¹⁶⁷ The Panel held its first meeting the following month,¹⁶⁸ and during its lifetime met at least once with the Commissioners.¹⁶⁹ Although section 1.19 of the Commission’s current regulations still lists this as an active advisory committee, it in fact held its last meeting in September 1993.¹⁷⁰ Given the nature of its charter and the absence of any reference to it in the Commission’s current website, it is safe to assume

¹⁶³ *Id.*

¹⁶⁴ Interview with Andrew Bates, *supra* note 7.

¹⁶⁵ 10 C.F.R. § 1.18 (2012).

¹⁶⁶ 10 C.F.R. § 1.19 (b) (2012).

¹⁶⁷ Statement of Policy, Programmatic Environmental Impact Statement of the Cleanup of Three Mile Island Unit 2, 46 Fed. Reg. 24,764, 24,764 (May 1, 1981).

¹⁶⁸ U.S. NUCLEAR REGULATORY COMM’N, OFFICE OF PUBLIC AFFAIRS, BACKGROUNDER: THREE MILE ISLAND ACCIDENT (2009), *available at* <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.pdf>.

¹⁶⁹ *See* Three Mile Island Unit 2 Cleanup: Progress Information, 50 Fed. Reg. 9143, 9144 (Mar. 6, 1985) (describing a meeting of the Commission and the Panel).

¹⁷⁰ 10 C.F.R. § 1.19 (2012); *see* Meeting of the Advisory Panel for the Decontamination of Three Mile Island, Unit 2, GPU Nuclear Corp., 58 Fed. Reg. 47,768, 47,769, (Sept. 10, 1993) (announcing that the Panel’s final meeting would be held September 23, 1993).

that it is now defunct.¹⁷¹ Dr. Bates has confirmed this conclusion.¹⁷²

C. Pilot Program Evaluation Panel

This short-lived advisory committee existed only from 1999 to 2000.¹⁷³ The Commission established the Panel under FACA¹⁷⁴ to evaluate the success of the agency's new reactor oversight process improvement pilot program¹⁷⁵ during the six-month period from June through November 1999.¹⁷⁶ The Panel delivered its Final Report to the Commission in late December 1999.¹⁷⁷ The Panel was comprised of representatives from NRC, the Nuclear Energy Institute, the nuclear industry, the public, and the

¹⁷¹ See generally 10 C.F.R. §§ 7.1(e), (e)(1) (2012); 10 C.F.R. § 7.16(c) (2012) (explaining termination of a committee after Commission review); 10 C.F.R. § 7.7(a) (2012) (indicating NRC committees generally terminate after two years, except under certain enumerated situations).

¹⁷² See Interview with Andrew Bates, *supra* note 7 (listing the only three active FACA advisory committees).

¹⁷³ NRC Pilot Program Evaluation Panel, Meeting Notice, 65 Fed. Reg. 1417, 1417 (Jan. 10, 2000).

¹⁷⁴ *Final Report of Pilot Program Evaluation Panel* (n.d.), at 1, appended to Memorandum to Samuel J. Collins, Director, Office of Nuclear Reactor Regulation, from Frank P. Gillespie, Deputy Director, Division of Inspection Program Management Office of Nuclear Reactor Regulation, *Final Report of the Pilot Program Evaluation Panel* (Dec. 17, 1999), in turn appended to Memorandum from William D. Travers, Executive Director for Operations, to the Commissioners (Dec. 21, 1999) (ML993550449). See also Transcript of Meeting of the Pilot Program Evaluation Panel (July 28, 1999), at 23 (ML993260301); *Draft Pilot Program*, at § 2.4.1, appended as Attachment 6 to SECY-99-007A, *Recommendations for Reactor Oversight Process Improvements (Follow-Up to SECY-99-007)* (Mar. 22, 1999) (ML992740073), available at <http://www.nrc.gov/reading-rm/doc-collections/commission/secys/1999/secy1999-007/1999-007ascy.pdf>.

¹⁷⁵ *Draft Objectives of the Regulatory Oversight Process Improvement Pilot Program*, at 7 (Feb. 10, 1999), appended to Memorandum from August K. Spector to File, *Summary of the February 10, 1999 Meeting with the Nuclear Power Institute to Discuss the Continued Development of Performance Assessment Process and Inspection Program Improvements* (Mar. 5, 1999) (ML003676345). The purpose of the pilot program was to test the Commission's new data reporting, inspection, assessment, and enforcement processes, "to identify process and procedure problems and make appropriate changes, and, to the extent possible, evaluate the effectiveness of the new process." SECY-99-007A, *Recommendations for Reactor Oversight Process Improvements (Follow-Up to SECY-99-007)*, *supra* note 174. See also NRC Press Release 99-146, *Pilot Program Evaluation Panel to Meet in Rockville, Maryland* (July 13, 1999) (ML003696516).

¹⁷⁶ SECY-99-007A, *supra* note 175.

¹⁷⁷ *Final Report of the Pilot Program Evaluation Panel*, *supra* note 174.

states.¹⁷⁸ These members were selected because of their affiliation rather than any particular technical expertise.¹⁷⁹ This committee and its successor (discussed immediately below) appear to be the only exceptions to the rule that NRC personnel do not serve on NRC FACA-chartered advisory committees.¹⁸⁰

*D. Reactor Oversight Process Initial
Implementation Evaluation Panel*

This advisory committee was chartered under FACA¹⁸¹ as a successor committee to the Pilot Program Evaluation Panel.¹⁸² Its purpose was to serve “as a cross-disciplinary oversight group to independently monitor and evaluate the results of the first year of initial implementation of the ROP [reactor oversight process] and provide advice and recommendations to the Director of the Office of Nuclear Reactor Regulation on reforming and revising the ROP.”¹⁸³ Its initial membership included an NRC resident inspector, a senior reactor analyst from the NRC, representatives from the NRC’s Office of Enforcement, the NRC’s regional offices, the Nuclear Energy Institute, public interest groups, state agencies, and companies operating nuclear power plants.¹⁸⁴ Thus, like the members of the Pilot Program Evaluation Panel, the members of this advisory committee appear to have been selected

¹⁷⁸ SECY-99-007A, *supra* note 175, at 7.

¹⁷⁹ See Official Transcript of Proceedings, Pilot Program Evaluation Panel, U.S. Nuclear Regulatory Comm’n (July 28, 1999), at 32, 34, 37 (ML993260301), *also available at* <http://pbadupws.nrc.gov/docs/ML9933/ML993310059.pdf> (stating that members of the Pilot Program Evaluation Panel are “representatives of different agencies and groups”).

¹⁸⁰ See E-mail from Andrew Bates (Feb. 13, 2012, 9:30AM), *infra* appendix B (confirming that the Pilot Program Evaluation Panel and the Reactor Oversight Process Initial Implementation Evaluation Panel are the only two exceptions to the general rule that NRC personnel do not serve on FACA Advisory Committees).

¹⁸¹ Reactor Oversight Process Initial Implementation Evaluation Panel, 65 Fed. Reg. 58,831, 58,831 (Oct. 2, 2000).

¹⁸² *Id.*

¹⁸³ NUCLEAR REGULATORY COMM’N, CHARTER, REACTOR OVERSIGHT PROCESS INITIAL IMPLEMENTATION PANEL (Oct. 17, 2000), *available at* http://www.nrc.gov/NRR/OVERSIGHT/ROP/iiep_charter.pdf.

¹⁸⁴ Reaction Oversight Process Initial Implementation Evaluation Panel, 65 Fed. Reg. at 58,832; *see also* Memorandum from Loren R. Plisco, Chairman, Initial Implementation Evaluation Panel to Samuel J. Collins, Dir., Office of Nuclear Reactor Regulation on the Summary of the Initial Implementation Evaluation Panel Meeting of Nov. 1–2 2000 (Dec. 5, 2000), *available at* <http://pbadupws.nrc.gov/docs/ML0037/ML003774507.pdf> (providing a list of panel members and their entity affiliations).

because of their affiliation rather than technical expertise.¹⁸⁵ The advisory committee held its first meeting in November 2000¹⁸⁶ and issued its Final Report the following May.¹⁸⁷

E. Nuclear Safety Research Review Committee (NSRRC)

The Commission established this FACA-chartered¹⁸⁸ committee in February 1988¹⁸⁹ and dissolved it in 1997.¹⁹⁰ During its lifetime, the NSRRC¹⁹¹ or its Chairman¹⁹² met often with the Commission. The committee's purpose was to "report[] to the Commission through the Director of the Office of Nuclear Regulatory Research on important management matters in the direction of the Commission's nuclear safety research program."¹⁹³ Its charter was broad, covering "all aspects of nuclear safety research including, but not limited to, accident management, plant aging, human factors and system reliability, earth science, waste disposal and seismic and structural engineering."¹⁹⁴

This committee had three principal responsibilities. First,

¹⁸⁵ *E.g.*, Memorandum from Loren R. Plisco to Samuel J. Collins, *supra* note 185 (explaining that members are selected to fairly balance membership by representing groups with different points of view).

¹⁸⁶ Reaction Oversight Process Initial Implementation Evaluation Panel Meeting Notice, 65 Fed. Reg. 62,379 (Oct. 18, 2000); *see also* Memorandum from Loren R. Plisco, *supra* note 185 (announcing that the first IIEP meeting will be held in November 2000).

¹⁸⁷ Memorandum from Loren R. Plisco, Chairman, Reactor Oversight Process Initial Implementation Evaluation to Samuel J. Collins, Dir., Office of Nuclear Reactor Regulation on the Final Report of the Reactor Oversight Process Initial Implementation Evaluation Panel (May 10, 2001), *available at* <http://pbadupws.nrc.gov/docs/ML0112/ML011290444.pdf>.

¹⁸⁸ *See* Nuclear Safety Research Review Committee, 62 Fed. Reg. 13,726, 13,726 (Mar. 21, 1997) (stating that the meeting will be conducted pursuant to FACA requirements).

¹⁸⁹ 10 C.F.R. § 1.19 (c) (2012); *see also* Nuclear Safety Research Review Committee; Meeting, 53 Fed. Reg. 4087, 4087 (Feb. 11, 1988) (stating that the first meeting will be held on Feb. 17-18, 1988).

¹⁹⁰ SECY-01-0163, *Research Effectiveness Review Board* (Aug. 24, 2001), at 1 (ML011520471).

¹⁹¹ *See, e.g.*, Sunshine Act Meeting, 62 Fed. Reg. 23,284, 23,284 (Apr. 29, 1997); 62 Fed. Reg. 19,634, 19,634 (Apr. 22, 1997); 62 Fed. Reg. 18,374, 18,374 (Apr. 15, 1997) (providing examples of meetings between the NRC and NSRRC).

¹⁹² *See, e.g.*, Sunshine Act Meeting, 61 Fed. Reg. 66,337, 66,337 (Dec. 17, 1996); 61 Fed. Reg. 65,247, 65,247 (Dec. 11, 1996); 61 Fed. Reg. 64,175, 64,176 (Dec. 3, 1996) (providing examples of meetings between the NRC and the Commissioner).

¹⁹³ 10 C.F.R. § 1.19(c) (2012).

¹⁹⁴ *Id.*

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it evaluated and reported on “the conformance of the nuclear safety research program to the NRC philosophy of nuclear regulatory research.” Second, it conducted “specialized studies when requested by the Commission or Director of the Office of Nuclear Regulatory Research.” And third, it interacted with “the Office of [Nuclear Regulatory] Research management staff and selected contractors in private industry, national laboratories, and universities.”¹⁹⁵

Its responsibilities also included the assessment of and recommendations concerning:

- a. Conformance of the NRC nuclear safety research program to the NRC Philosophy of Nuclear Regulatory Research, as stated in the Committee’s Strategic Plan, and to specific Commission directions.
- b. Likelihood of the program meeting the needs of the users of research.
- c. Appropriateness of the longer range research programs and the correctness of their direction.
- d. Whether the best people are doing the work at the best places; whether there are other options, including cooperative programs, that would yield higher quality work, or otherwise improve program efficiency.
- e. Whether the program is free of obvious bias, and whether the research products have been given adequate, unbiased peer review.
- f. . . . [S]pecialized studies when requested by the Commission or the Director of the Office of Nuclear Regulatory Research. If appropriate, these studies will be published as reports.¹⁹⁶

Its members (numbering 9 to 12) were selected to ensure an appropriately balanced representation of the research management community, taking into account: (1) demonstrated experience in high-level management of programs in applied research; (2) demonstrated expertise in one or more disciplines of applied science and engineering;¹⁹⁷ (3) broad acquaintance with the public health and safety issues associated with the peaceful uses of atomic energy; and (4) a balance of experience in the

¹⁹⁵ *Id.*

¹⁹⁶ Renewal of Charter for Nuclear Safety Research Review Committee, 61 Fed. Reg. 6043, 6044 (Feb. 15, 1996).

¹⁹⁷ These disciplines included “applied physics, chemistry, radio-biology, health physics, human factors, digital and analog instrumentation and control systems, materials science and engineering and the classical engineering disciplines.” Nuclear Safety Research Review Committee: Establishment, 53 Fed. Reg. 1423 (Jan. 19, 1988).

academic, industrial, and national and not-for-profit laboratory environments.¹⁹⁸

More specifically, members were selected on the basis of their expertise in nuclear engineering and nuclear safety, with emphasis on demonstrated capabilities in major portions of one of the following two areas:

Advanced instrumentation and controls and human factors, including human-system interfaces.

Broad experience in design and operation of nuclear power plants, nuclear engineering, and research related to nuclear power plants.¹⁹⁹

F. Independent External Review Panel to Identify Vulnerabilities in the U.S. Nuclear Regulatory Commission's Material Licensing Program

The Commission created this FACA-chartered committee in October of 2007²⁰⁰ in response to a report from the NRC's Inspector General.²⁰¹ The Panel was charged with preparing "an assessment of the existing and potential security vulnerabilities related to NRC's specific, import, export and general license programs [and an evaluation of] the apparent good-faith

¹⁹⁸ Renewal of Charter for Nuclear Safety Research Review Committee, 61 Fed. Reg. 6043, 6044 (Feb. 15, 1996); *see also* Nuclear Safety Research Review Committee: Establishment, 53 Fed. Reg. 1423, 1423 (Jan. 19, 1988) (stating that members were chosen "from industrial, national laboratory, university, and not-for-profit research organizations.").

¹⁹⁹ Call for Nominations for Nuclear Safety Research Review Committee, 60 Fed. Reg. 24,660, 24,660 (May 9, 1995).

²⁰⁰ *See* Notice of Intent to Establish External Review Panel to Identify Vulnerabilities in the U.S. Nuclear Regulatory Commission's Material Licensing Program, 72 Fed. Reg. 57,600, 57,600 (Oct. 10, 2007) ("This notice is to announce the NRC intends to establish a new advisory committee . . . The U.S. Nuclear Regulatory Commission (NRC) is chartering a new advisory committee."); U.S. NUCLEAR REGULATORY COMM'N, CHARTER: INDEPENDENT EXTERNAL REVIEW PANEL TO IDENTIFY VULNERABILITIES IN THE U.S. NUCLEAR REGULATORY COMMISSION'S MATERIAL LICENSING PROGRAM (Oct. 2, 2007) (ML072750491).

²⁰¹ Notice of Intent to Establish External Review Panel to Identify Vulnerabilities in the U.S. Nuclear Regulatory Commission's Material Licensing Program.

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presumption that pervades the NRC licensing process.”²⁰² The Panel also performed an independent evaluation of the NRC's licensing policies and guidance.²⁰³

The Panel was comprised of a former director of the NRC's Agreement State program and members from both the NRC's Advisory Committee on Nuclear Waste and Materials and the Defense Threat Reduction Agency.²⁰⁴ During its six-month lifespan, the Panel received briefings from the NRC staff and an Agreement State representative; a licensee also briefed the Panel on issues related to the NRC's materials licensing program.²⁰⁵ On March 18, 2008, the Panel in turn briefed the Commission on the Panel's Final Report.²⁰⁶ Subsequently, the Chairman informed Senator Carl Levin that the Commission intended to implement the Panel's recommendations.²⁰⁷

Although the Panel's meetings were generally open to the public, portions were closed so that the NRC staff could brief the panel on classified material,²⁰⁸ safeguards information, and pre-

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ Status of Recommendations from the U.S. Senate Permanent Subcommittee on Investigations Report, Dirty Bomb Vulnerabilities (n.d.), appended to Letter from Dale E. Klein, Chairman, U.S. Nuclear Regulatory Comm'n, to Carl Levin, Chairman, Permanent Subcomm. on Investigations, Comm. on Homeland Sec. & Gov't Affairs (June 6, 2008), available at <http://pbadupws.nrc.gov/docs/ML0813/ML081350223.pdf>.

²⁰⁵ Audit of the NRC Byproduct Materials License Application and Review Process; OIG-06-A-11; Status of Recommendations (n.d.), at unnumbered page 5, appended to Memorandum from Stephen D. Dingbaum, Assistant Inspector Gen. for Audits, U.S. Nuclear Regulatory Comm'n to Luis A. Reyes, Exec. Dir. for Operations, U.S. Nuclear Regulatory Comm'n (May, 1 2008), available at <http://pbadupws.nrc.gov/docs/ML0812/ML081220952.pdf>.

²⁰⁶ United States Nuclear Regulatory Commission, Briefing by the Independent External Review Panel to Identify Vulnerabilities in the U.S. NRC's Materials Licensing Program (Mar. 18, 2008) (ML080840367); *Final Report of the Independent External Review Panel to Identify Vulnerabilities in the U.S. Nuclear Regulatory Commission's Materials Licensing Program* (Mar. 11, 2008), appended to Letter from Thomas E. Hill, Chairman, Indep. External Review Panel, to Dale E. Klein, Chairman, U.S. Nuclear Regulatory Comm'n (Mar. 11, 2008), available at <http://pbadupws.nrc.gov/docs/ML0807/ML080700957.pdf>.

²⁰⁷ Status of Recommendations from the U.S. Senate Permanent Subcommittee on Investigations Report, Dirty Bomb Vulnerabilities (n.d.), appended to Letter from Dale E. Klein, *supra* note 204.

²⁰⁸ Independent External Review Panel to Identify Vulnerabilities in the U.S. Nuclear Regulatory Commission's Materials Licensing Program: Meeting Notice, 73 Fed. Reg. 5235, 5235 (Jan. 29, 2008).

decisional information.²⁰⁹

G. Peer Review Committee for Source Term Modeling

This advisory committee was chartered under FACA on October 10, 2002,²¹⁰ and from the fact that the final *Federal Register* notice of the committee's meeting was published in June 2004,²¹¹ it is safe to assume that the committee was dissolved around that time.²¹² The membership was "composed of individuals with expertise in structural, nuclear, and thermal engineering, fuel performance and source term evaluations, consequence analyses, weapons and explosives, and transportation of radioactive material."²¹³

The committee's purpose was to "[d]evelop guidance documents that will assist the NRC in evaluating the impact of specific terrorist activities targeted at a range of spent fuel storage casks and radioactive material . . . transport packages, including spent fuel."²¹⁴ The committee was instructed to develop these documents "from a literature search, appropriate code usage and an expert judgement [sic] process."²¹⁵ Given the subject it was chartered to address, it is not surprising that all of the committee's work was classified.²¹⁶ Consequently, its meetings were closed to the public to protect national security information²¹⁷ and the publicly available documents are both few

²⁰⁹ Independent External Review Panel to Identify Vulnerabilities in the U.S. Nuclear Regulatory Commission's Materials Licensing Program: Meeting Notice, 72 Fed. Reg. 72,775, 72,775 (Dec. 21, 2007).

²¹⁰ U.S. NUCLEAR REGULATORY COMM'N, CHARTER OF THE PEER REVIEW COMM. FOR SOURCE TERM MODELING (2002), *available at* <http://pbadupws.nrc.gov/docs/ML0228/ML022830777.pdf>; Peer Review Comm. for Source Term Modeling, 67 Fed. Reg. 64,146, 64,146 (Oct. 17, 2002).

²¹¹ Peer Review Committee for Source Term Modeling; Meeting Notice, 69 Fed. Reg. 31,850, 31,850 (June 7, 2004).

²¹² Neither Westlaw nor the Commission's database contain any document specifying the date, or even year, in which this committee was dissolved.

²¹³ CHARTER OF THE PEER REVIEW COMM. FOR SOURCE TERM MODELING, *supra* note 210.

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ *See* Interview with Andrew Bates, *supra* note 7 ("Everything an NRC FACA-chartered advisory committee does is transparent unless it involves proprietary or classified information").

²¹⁷ *See, e.g.*, Peer Review Committee for Source Term Modeling; Notice of Meeting, 68 Fed. Reg. 14,266, 14,266 (Mar. 24, 2003); Peer Review Committee for Source Term Modeling; Notice of Meeting, 68 Fed. Reg. 2811, 2811 (Jan. 21, 2003).

and superficial.

IV. EXISTING ADVISORY COMMITTEE NOT CHARTERED UNDER FACA

A. *The Committee To Review Generic Requirements (CRGR).*

As with other advisory committees that are comprised entirely of full-time NRC employees, the CRGR is not a FACA-chartered committee.²¹⁸ The CRGR “once reviewed rulemakings but no longer does so.”²¹⁹ It now exclusively reviews individual licensing issues.²²⁰ Specifically, the CRGR “reviews proposed generic backfits^[221] that are to be imposed on all power reactors and/or selected nuclear materials facilities that are licensed by the . . . NRC . . .”²²² Specifically, its primary responsibilities are “to recommend either approval or disapproval of the staff’s proposed backfits, and to guide and assist the NRC’s program offices in implementing the Commission’s backfit policy.”²²³ These reviews are intended “to ensure that such backfits are appropriately justified based on the backfit provisions of applicable NRC regulations and the Commission’s backfit policy.”²²⁴ The CRGR also provides the Commission with an annual report describing the committee’s activities during the previous year and its recommendations regarding the issues reviewed during that period.²²⁵ Finally, the committee reviews the agency’s “generic administrative backfit controls to ensure that they are sufficient

²¹⁸ Interview with Andrew Bates, *supra* note 7. FACA-chartered advisory committees may, however, include some full-time governmental employees. *E.g.*, Reactor Oversight Process Initial Implementation Evaluation Panel, *supra*, Part III.D.

²¹⁹ Interview with Brad Jones & Geary Mizuno, *supra* note 26.

²²⁰ *Id.*

²²¹ 10 C.F.R. § 50.109(a) (2012) (defining ‘backfitting’ as “the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission’s regulations or the imposition of a regulatory staff position interpreting the Commission’s regulations that is either new or different from a previously applicable staff position . . .”).

²²² *The Committee to Review Generic Requirements (CRGR)*, U.S. NUCLEAR REGULATORY COMM., <http://www.nrc.gov/about-nrc/regulatory/crgr.html> (last updated Mar, 29, 2012).

²²³ *Id.*

²²⁴ *Id.*

²²⁵ *Id.*

and that the related staff guidance is comprehensive and clear.”²²⁶

The committee is designated as an advisory committee to the NRC’s Executive Director for Operations (EDO) rather than to the Commission itself.²²⁷ The EDO appoints the committee’s chairman and members.²²⁸ The committee is comprised of the chairman and one representative from each of the following NRC offices:

- Office of Nuclear Regulatory Research
- Office of Nuclear Reactor Regulation
- Office of Nuclear Material Safety and Safeguards
- Office of Nuclear Security and Incident Response
- Office of New Reactors
- FSME
- Office of the General Counsel
- One of the NRC’s four Regional Offices²²⁹

V. DEFUNCT ADVISORY COMMITTEE NOT CHARTERED UNDER FACA

A. *Advisory Committee of State Officials (ACSO)*²³⁰

The AEC’s Director of Operations formed the twelve-member ACSO in late 1955,²³¹ and the committee first met in February

²²⁶ *Id.*; see also U.S. NUCLEAR REGULATORY COMM’N, CHARTER OF THE COMMITTEE TO REVIEW GENERIC REQUIREMENTS (Rev. 8, Mar. 2011), available at <http://pbadupws.nrc.gov/docs/ML1106/ML110620618.pdf> (“The Committee will ensure that proposed generic backfits to be imposed . . . are appropriately justified . . .”).

²²⁷ *The Committee to Review Generic Requirements (CRGR)*, *supra* note 222.

²²⁸ CHARTER OF THE COMMITTEE TO REVIEW GENERIC REQUIREMENTS, *supra* note 226.

²²⁹ *CRGR Membership*, U.S. NUCLEAR REGULATORY COMM., <http://www.nrc.gov/about-nrc/regulatory/crgr/membership.html> (last updated Mar. 29, 2012). Further information about this committee as well as its charter are available at its website, <http://www.nrc.gov/about-nrc/regulatory/crgr.html>.

²³⁰ This advisory committee was chartered prior to the enactment of FACA in 1972. See Act of Oct. 6, 1972, Pub. L. No. 92-463, 86 Stat. 770; see also *Micosukee Tribe of Indians v. S. Everglades Restoration Alliance*, 304 F.3d 1076, 1082 (11th Cir. 2002) (“Congress enacted FACA in 1972 to reform the use of advisory committees by the Executive Branch.”).

²³¹ National Materials Program: Options and Recommendations, *Final Report of the Working Group*, SECY-99-250, Vol. 1, at p. 1.3 (May 2001) (ML011590431); *Topical Discussion of the NRC/Agreement State Program*, at 2 (1994) (referring to the “Director of Regulation (or equivalent)”), appended to Memorandum to Agreement State Program Directors from Ad-Hoc Committee to Update Topical Report, *Update to the OAS Topical Discussion* (Dec. 10, 2001)

1956.²³² Its purposes were to give the states a voice in the AEC's decisions²³³ and to advise the AEC on issues involving federal/state relations both prior to and after the 1959 enactment of Section 274 of the Atomic Energy Act.²³⁴ Under Section 274, the NRC was authorized to transfer to "agreement states" its regulatory authority over byproduct, source, and special nuclear materials.²³⁵ To implement this section, the AEC consulted with the ACSO and other entities in 1960, and issued criteria the following year to evaluate the applications of those states seeking "agreement state" status.²³⁶ By 1961, the committee was advising the AEC on issues involving the states' assumption of authority for the regulation of byproduct, source, and special nuclear materials.²³⁷ In 1962, it was reviewing and commenting to the AEC regarding proposed rules governing the transfer of authority to the states.²³⁸ There appears to be no official record of the date on which the ACSO was disbanded, but the Organization of Agreement States commented in 1994 that it believed the dissolution occurred in the mid-to-late 1960s.²³⁹

VI. CONCLUSION

This article has provided a survey of the NRC's advisory committees that now address, or have addressed, technical issues. The article has covered both FACA and non-FACA committees, both existing and defunct committees, and finally,

(ML020380420); George B. Adams, Jr., *Regulation of Health and Safety in Private Atomic Energy Activities: A Problem in Federal-State Relationships*, 27 GEO. WASH. L. REV. 163, 166–67 (1958); John I. Saks, *Labor Implications of Peaceful Uses of Atomic Energy*, 80 MONTHLY LAB. REV. 921, 924 (1957).

²³² *Topical Discussion of the NRC/Agreement State Program*, *supra* note 231, at 2.

²³³ Albert W. Harris, Jr., *State Regulation of Hazards Growing out of the Use of Atomic Energy*, 46 CAL. L. REV. 84, 87 n. 20 (1958).

²³⁴ *Topical Discussion of the NRC/Agreement State Program*, *supra* note 231, at 2.

²³⁵ *Id.*

²³⁶ *Id.*

²³⁷ See Letter from Richard P. Correia, Acting Chief, Materials Safety and Inspection Branch, Div. of Indus. and Med. Nuclear Safety, NMSS, to Dixie J. Wells-O'Dou, Radiation Safety Officer, Rad Ware, (Feb. 9, 2005), at 2, *available at* <http://pbadupws.nrc.gov/docs/ML0504/ML050400249.pdf> (explaining how regulatory authority can be shared between Commission and the States).

²³⁸ Exemption and Continued Regulatory Auth. In Agreement States Under Section 274, 27 Fed. Reg. 1351, 1351 (Feb. 14, 1962).

²³⁹ *Topical Discussion of the NRC/Agreement State Program*, *supra* note 231, at 2.

both committees that report directly to the Commission and those that report instead to the NRC Staff. These technical advisory committees have long played an important role at the NRC, and continue to do so today. Given the continuing influx of highly complex scientific and engineering issues in the nuclear arena, the NRC will doubtless continue to call on technical advisory committees for assistance. The author hopes that the information in this article will provide the NRC, and perhaps other scientific agencies, with information helpful in structuring and establishing such committees in the future.²⁴⁰

²⁴⁰ Although beyond the scope of this article, the Commission could benefit from an examination of advisory committees in other health-related Federal agencies such as the Food and Drug Administration (FDA) and the Environmental Protection Agency. See, e.g., Stephanie Tai, *Comparing Approaches Towards Governing Scientific Advisory Bodies on Food Safety in the United States and the European Union*, 2010 WIS. L. REV. 627, 640–51 (providing a detailed description of the FDA’s Food Advisory Committee). Specifically, Dr. Tai discusses three topics that are also addressed in this article: selection of the advisory committee (*Id.* at 640–44), meeting structure (*Id.* at 644–46), and transparency (*Id.*). Because the Food Advisory Committee differs in many important respects from the NRC’s current and defunct advisory committees, Dr. Tai’s article is particularly informative in providing an alternative approach to the ones used by the NRC.

APPENDIX A: ROLAND FRYE'S INTERVIEWS WITH NRC PERSONNEL
REGARDING ADVISORY COMMITTEES

Interview with Trip Rothschild²⁴¹

Mr. Trip Rothschild: The Advisory Committee on Reactor Safeguards constitutes, in essence, a peer review of the NRC staff's technical work.

Interview with Dan Graser²⁴²

Mr. Graser joined DOE at 10/88, at end of negotiated rulemaking process for the Yucca mountain computerized data base project. This negotiated rulemaking ended in Dec. 1988, and the rule was promulgated in 1989 as 10 C.F.R. Part 2, Subpt. J. About two-thirds of Subpart J deals with technical issues; the remaining one-third deals with rules of procedure that differ from the Commission's usual procedural rules.

1. Q: How did this advisory group differ from the more traditional ACRS, ACMUI and ACNW? How did it work? Was it involved in any rulemakings? What role did it play there?

A: The licensing support system (LSS) (and later the licensing support network (LSN) advisory review panel) is an advisory committee under FACA, but it differs from other NRC advisory committees insofar as it has a very narrow focus to oversee and implement a negotiated rulemaking – i.e., the building of a shared documentary database. This committee also differs from other advisory committees in that the latter do not have specific tasks or projects, but rather are assigned more general tasks.

When selected, this advisory committee's membership reflected the interests of a very narrowly defined constituency.

²⁴¹ Mr. Rothschild is the Associate General Counsel for Licensing and Regulation at the NRC.

²⁴² Mr. Graser was, until recently, the computer technology expert with the NRC's Atomic Safety and Licensing Board Panel. In that capacity, he served as the manager of the Board's Licensing Support Network and administrator of the Licensing Support Network Advisory Review Panel.

Membership was assigned by affiliation, not expertise (few people understood large databases or the worldwide web). Members needing computer expertise would get it from within their own organizations or on the side. When membership was established, “the public” was not really viewed as a constituency, because the public did not have a stake in the design and use of the database. (Instead, those with a stake were litigators and adjudicators.) Most of the advisory committee thought of public access as a mere side benefit. The Nevada Nuclear Task Force came onto the advisory committee only in 6th or 7th year of the committee’s life.

This advisory committee philosophically reflected a distrust of both the DOE and the NRC; many of its members thought that, unless a computerized document system were designed by an independent advisory committee, the DOE and the NRC would place other entities at a disadvantage. The environmentalists opted out of the negotiated rulemaking, but the other stakeholders stayed in and ultimately had seats at the table as members of the advisory committee when it was created by regulation in 1989. (In 1998, a regulation changed Subpart J and also changed the computerized database system from a mainframe-based system to a web-based system.)

Panel members were not at all involved in subsequent rulemakings – the only one of which was the 1998 rulemaking mentioned above. Likewise, the committee was not involved in any other rulemakings. Although the members may have been involved in the 3.69 guidelines for review of the Yucca Mountain application, the advisory committee itself was not.

2. Q: Please identify some representative/standard examples of when this advisory group was consulted and how (good case studies or examples).

A: The committee was useful in developing consensus. Specifically, it was effective in choosing member of the committee’s smaller technical working group meetings that examined subsidiary issues. The full committee (including all of its members) always adopted the technical working groups’ recommendations in their entirety. The technical working groups (of which there were 3-4 in total) would work on, e.g., the bibliographical header design that formed the basis for searches. One such group designed three different design approaches that were consistent with worldwide web (then new). The technical working groups formulated the functional requirements that, in

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effect, said: "this is what we intend to buy and these are the criteria that you, the contractor, must use in developing a product." The technical working groups were the foundation of all the accomplishments of the full advisory committee.

3. Q: When was this advisory group NOT used within its area of expertise, and why?

A: No one at the time knew how to build huge litigation support databases. So the membership was not based on technical expertise – because little such expertise then existed. Instead, membership was based on who was involved in the earlier negotiated rulemaking. Members included private attorneys who practiced before the NRC, Nevada county commissioners, and a trained arbitrator & litigation support expert. The advisory committee itself was not the one to directly address technical issues. Those responsibilities fell to the working groups (mentioned above).

The advisory committee stopped being used around 2004-05, effectively on the day the NRC appointed the pre-adjudication presiding officer (PAPO). At that point, the administrator (Mr. Graser) would report mainly to the PAPO and the construction authorization board (one of the Licensing Board's adjudicatory panels). The committee became irrelevant because a PAPO order would trump anything that the advisory committee would recommend.

4. Q: Please give example of situations where the Commission or the staff has followed the advisory committee's recommendations, and also where they have not done so. Are the reasons for these decisions explicated? Where?

A: The Commission and staff always followed the advisory committee's recommendations up until the appointment of the PAPO. This was because the advisory committee did exactly what it was chartered to do. The advisory committee gave statistics and recommendations to the Commission; the Commission would then tell Mr. Graser to make the advisory committee's recommendation happen; next Mr. Graser would give the Commission a request for the necessary resources to do so – resources which the Commission always authorized.

5. Q: Are there stories – good or bad – about the committee's use by the NRC?

A: No stories. The Commission was concerned simply that there be a level playing field for all the stakeholders to use in getting information that was relevant to the Yucca Mountain

proceeding.

6. Q: How were committee's members chosen? Was it based on affiliation or expertise (or both)?²⁴³

A: The advisory committee was established in April 1989 when Subpart J was promulgated. It was an outgrowth of the negotiated rulemaking process. Some of the parties to the negotiated rulemaking parties (e.g., Nye County) automatically got seats on the committee. A single county was designated to represent the interests of all Nevada counties other than Nye, but this was later changed to allow each county a representative.

7. Q: What specific measures did the advisory committees take to provide for transparency? And what transparency steps did they not take? Why? Did they issue publicly available "reports" on specific questions/issues? Could outsiders follow the role they play? How could the public follow? To what extent were this advisory committee's reports and other documents subject to pre-deliberative privilege?

A: Notices were published in the *Federal Register* announcing all public meetings. All meetings were open to the public, with open microphones at end of each meeting. The meetings were held in either Washington DC or Nevada, plus one in Wisconsin. Little if anything was marked pre-deliberative. To the extent anything was withheld from the public, it would have been associated with the awarding of the first contract in October 2000. This initial award was challenged and overturned; in January 2001 meeting, Mr. Graser explained to the advisory committee why there would be a three-month delay. Mr. Graser relayed some of this information to the committee only in the most general terms. This was done because the contract was still new and was subject of another protest; so, given that the information was procurement-sensitive, Mr. Graser kept his remarks quite general in order to avoid a second protest. Mr. Graser, who was both the NRC's staffer and a voting member of the advisory committee, provided information that was available in the contract award document, but he would not put in the public domain any information that was commercially privileged (e.g., a percentage discount that the successful bidder was offering the NRC over other similar contracts). This would have been the only kind of information that Mr. Graser withheld from

²⁴³ See also Interview with Dan Graser, *supra*, answer to question 1 (discussing committee selection).

the advisory committee.

All meetings were transcribed and the transcripts were then placed in the public records system and the Public Documents Room. At the time, this was the "state of practice" for governmental transparency. Mr. John Hoyle, the LSNARP Chairman, would write a two-page summary and provide it in-house and to all voting members of the advisory committee. The contents of the advisory committee's meetings was difficult for outsiders to follow because of the esoteric nature of the databases, the worldwide web and the administrative procedural rules; so most of the public attendees would not have had any idea what the members were discussing.

Interview with Andrew Bates²⁴⁴

Dr. Bates confirms that the Commission currently has only three active FACA advisory committees – the Advisory Committee on Reactor Safeguards (ASRS), the Advisory Committee on Medical Use of Isotopes (ACMUI), and the Licensing Support Network Advisory Review Panel (LSNARP). Dr. Bates sits on the selection committee of the ACRS and sat on a similar committee for the now-defunct Advisory Committee on Nuclear Waste (ACNW). According to Dr. Bates, if a committee is comprised entirely of NRC employees, the Commission will not charter it as a FACA advisory committee even though it solicits and receives information from outside the agency; conversely, if the committee is comprised of outsiders, it will be chartered as a FACA committee. In the past, the Commission has chartered FACA advisory committees on the regulatory process and on post-Three Mile Island. Finally, Dr. Bates observes that the members of ACRS and ACMUI work very hard. The former committee requires 100-120 days a year from each member, with full committee meetings running three days and with 2-3 subcommittee meetings each month.

1. Q: How do the Committee to Review Generic Requirements (CRGR) and LSNARB differ from the more traditional ACRS, ACMUI and ACNW?

A: The LSNARP is still alive but has held no meetings for six

²⁴⁴ Dr. Bates is currently Senior Advisor to the Secretary of the Nuclear Regulatory Commission. In that capacity, he serves as the Advisory Committee Management Officer for the NRC.

years. It was rechartered in 2010, simply to allow for the possibilities that DOE could either revive its Yucca Mountain petition or present the Commission with another petition for a different high-level waste disposal repository. This committee stemmed from a negotiated rulemaking and originally focused on a licensing support network that would have been based on a mainframe computer; later the focus shifted to a web-based system. The committee's members are chosen to represent the parties and potential parties²⁴⁵ in the NRC's high-level waste proceeding. In this respect, it differs from other current NRC advisory committees, whose members are selected on the basis of expertise, not constituency.

The CGRG is not a FACA advisory committee.²⁴⁶ It was instituted after the promulgation of the Commission's backfit rule. Its purpose is to review new generic requirements and determine which could be backfitted (applied retroactively). The committee is chaired by one of the two Deputy Executive Directors for Operations and has various office directors among its members.

2. Q: When are advisory groups consulted? How and by whom? Is there a standard process for involving science advisory groups in certain sets of informal rules, or adjudicatory decisions, or in other contexts? Or is consultation more sporadic and *ad hoc*?

A: ACRS is a statutory committee and has functions specified under section 29 of the Atomic Energy Act, including the review of every power reactor license application. Dr. Bates does not think the committee's functions include the review of research reactor license applications, but he cannot find a reference one way or the other. He believes, however, that ACRS could do so on its own initiative under Section 29 as well as 10 C.F.R. § 1.13, or that the Commission could ask it to do so under 10 C.F.R. § 2.102(b) & (c). But he does not know if it has ever conducted such a review. By contrast, ACMUI is not a statutory committee, although it too is chartered under FACA. It serves essentially as an advisory body to the Commission and to the medical staff of FSME. ACMUI generally meets with Commission once a year.

²⁴⁵ 10 C.F.R. § 2.1011(d).

²⁴⁶ U.S. NUCLEAR REGULATORY COMM'N, CRGR CHARTER, <http://www.nrc.gov/about-nrc/regulatory/crgr/charter.html> (last updated March 29, 2012).

The ACRS was chartered in the 1950s and, for decades was largely self-perpetuating. The Committee would recommend new members to replace retiring members – colleagues and sometimes their former graduate students. In the early 1980s, the Commission asked the ACRS for more than one name in the replacement process, and also set three-term limits with a few exceptions. (Each term is for four years under Section 29.) In the late 1990s, the Commission further set up a selection panel to recommend replacements who would be considered along with the ACRS's own recommendations. These policies remained in place until early 2011, when the Commission asked the ACRS to reexamine them. Although the ACRS responded that the policies were working just fine, the Commission nonetheless did away with the three-term limit.

The ACRS also reviews all proposed and final rules related to nuclear reactors. And it has, on occasion, looked into matters that the staff did not want examined. Similarly, both the Commission and the staff have occasionally received advice from the ACRS that they neither solicited nor wanted. The same was true of the ACNW. However, Dr. Bates could not readily put his hands on specific documentation of these instances.

Like the ACRS, the ACMUI has a selection panel to recommend new members. At one time the appointments were made by the Commission, but the selection decision has now been delegated to the Director of the Office of Federal and State Materials and Environmental Management Programs (FSME), who notifies the Commission before any appointments are final. All members of this committee come from outside the Commission and all are involved in one facet or another of nuclear medicine. Dr. Bates is uncertain whether the ACMUI reviews all proposed and final rules that are relevant to its charter, or instead reviews only those that the staff sends the advisory committee.

The now-defunct ACNW was born in the 1980s, was comprised of members who were transferred from the ACRS, and had its own charter under FACA. Like the ACRS, the ACNW reviewed the agency's proposed and final rules that were relevant to its charter.

3. Q: Speaking of ad hoc consultations, how often does an advisory group (like ACMUI) initiate informal rulemakings or other decisions on its own? How does this work? Whom do they contact? What kind of circumstances would trigger such a self-

initiated initiative?

A: These committees do not initiate rulemakings on their own. At most, they will recommend that the Commission initiate a rulemaking. Dr. Bates, however, has no examples of this.

4. Q: How many and what kinds of informal rules or other decisions involve advisory group consultation? Is there a database/record of how/when the committees are involved? Are they engaged only in more exceptional decisions?

A: The ACRS reviews not only rulemakings but also relevant draft and final Regulatory Guides (a kind of NRC guidance document). As noted above, the ACRS also reviews all operating license applications and all construction permit applications for nuclear reactors. When reviewing applications, the ACRS will review the staff's documents that would approve, or support a decision to approve, application. ACRS will then issue a letter to the NRC staff approving the staff's own proposed approval of a license application. Finally, the staff will submit the ACRS's letter to the licensing board (assuming there is a challenge to the application).²⁴⁷ The ACRS may, as it chooses, add recommended conditions for the staff's approval. In this situation, the staff will issue a written response the bottom line of which has always been "we impose the following conditions."

Dr. Bates is aware of no instance where the ACRS has withheld its approval of an operating license application or construction permit application that was supported by the staff. He knows there are cases where staff does not adopt or agree with some of the ACRS' recommendations.²⁴⁸ There are other cases that can be found over the years. There is an interesting discussion in Sam Walker's book *Containing the Atom*²⁴⁹ on the ACRS – Staff interactions during the early years when reactor siting criteria were being developed and sites in NYC (Ravenswood), Boston (Edgar), and outside Trenton/Philadelphia (Burlington) were proposed by utilities but had population densities too high to meet the Atomic Energy Commission's criteria. The discussion reveals much about how the ACRS and staff interacted at the time and still interact today. Dr. Bates

²⁴⁷ 10 C.F.R. § 2.102(b), (c).

²⁴⁸ Referring to attachment to his email from 11/4/11 (10:50 a.m.) (on file with author).

²⁴⁹ J. SAMUEL WALKER, *CONTAINING THE ATOM: NUCLEAR REGULATION IN A CHANGING ENVIRONMENT, 1963-1971* 57–83 (1992).

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also attached to his e-mail²⁵⁰ a number of other ASRC/Staff letters that illustrate the formal interaction between the two.

5. Q: Is there a standard flow chart describing the process by which the committees are involved? Do they review staff recommendations and write a report? Or do they write the report first, and then the staff reviews it? Do they generate the initial review of the literature? Does it vary from issue to issue?

A: The staff presents its documentation, underlying reasoning, and status/conclusions to the advisory committee in subcommittee and full committee meetings. The advisory committee then reviews and sends its own report back to the staff or the Commission, as appropriate. The staff presents its conclusions and underlying reasoning to the advisory committee. The advisory committee then reviews and sends its own report back to the staff. The staff's current practice is to issue a written response to each of the advisory committee's recommendations (although this was not always the case). ACMUI reports generally go to the staff/FSME Director unless the Commission has asked the committee directly for input (which has happened). The ACRS Reports generally are directed to the Commission for final reports with interim reports and regulatory guide reviews often going to NRC's Executive Director for Operations. There is thus a mix of addressees above.

Advisory committees do not conduct literature searches. If anyone does this at all, it would be the staff. The Office of Research (RES) will look into the current science, but it is very unlikely that this will take the form of a literature search *per se*. Instead, RES would write a report with citations and references to what is going on at other science laboratories.

6. Q: What specific measures do the advisory committees take to provide for transparency? And what transparency steps do they not take? Why? Do they issue publicly available "reports" on specific questions/issues? Can outsiders follow the role they play? How can the public follow? To what extent are advisory committees' reports and other documents subject to pre-deliberative privilege? (I would assume they aren't subject to this unless the subject involves proprietary/ classified/ etc. information that shouldn't be available to the public.)

A: Everything an NRC FACA-chartered advisory committee does is transparent unless it involves proprietary or classified

²⁵⁰ *Infra* Appendix B.

information. (Dr. Bates is not sure whether this is also the case for non-FACA committees.) This applies even to the process of drafting letters – a process that can take several sessions.

ACMUI will occasionally issue oral rather than written recommendations. Also, early in its existence, ACMUI served as a pool of individual advisors to NMSS. In the late 1980s, GSA nearly shut ACMUI down for this reason.

Pre-deliberative privilege only arises in the context of an advisory committee's review of a draft staff document, where the privilege attaches to the staff's document. Finally, neither ACRS nor ACMUI reviews financial documents, so there is never a question as to the applicability of any kind of confidential financial privilege.

7. Q: In general, do the advisory groups help NRC stay abreast of the latest science/technology?

A: ACMUI is a resource to NMSS for current medical advice. ACRS members are from universities, national laboratories, and industrial companies that have research labs – so ACRS can provide information from their organizations to the various nuclear reactor offices (Office of New Reactors (NRO), Office of Nuclear Reactor Regulation (NRR) and, to a lesser extent, the Office of Nuclear Security and Incident Response (NSIR)) as well as to the Commission. A lot of communication occurs through meetings between the staff and the relevant advisory committee. Formal positions are communicated through advisory committees' reports.

8. Please identify some representative/standard examples of when advisory groups were consulted and how (good case studies or examples).

No specific case studies, but see above.

9. Q: When are advisory groups NOT used and why?

A: To Dr. Bates's knowledge, this has never happened in any area where the advisory committee has expertise. But after 9/11, when security issues were pending before the Commission, the ACRS asked if they were to be involved and the Commission said that it did not want them involved other than looking at security to the extent it would affect plant safety. Finally, there have been memoranda over the years addressing what information the staff would provide to the ACRS.

10. Q: Please give example of situations where the Commission or the staff has followed the advisory committees' recommendations, and also where they have not done so. Are the

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reasons for these decisions explicated? Where?

A: There is a good paper trail of memoranda going to ACRS stating how the staff plans to implement ACRS's recommendations. Dr. Bates is aware of no instance in which the Commission itself outright ignored an ACRS recommendation. As stated above, Dr. Bates is likewise aware of no instance where the ACRS has withheld its approval of an operating license application or construction permit application that was supported by the staff.²⁵¹ Although, to Dr. Bates's knowledge, there have been no disagreements between the staff and ACRS regarding ACRS-recommended license conditions on a facility, the staff and ACRS have disagreed regarding ACRS recommendations that were made on staff positions expressed in a regulatory guide or in an evaluation of a vendor topical report.

11. Q: Are there stories – good or bad – about their use by the NRC?

A: No.

12. Q: How are ACs' members chosen? Is it based on affiliation or expertise (or both)?

A: Expertise is the basis for membership on ACRS and ACMUI. Affiliation is the basis for LSNARB. For ACRS, one important goal is to have a balanced membership. One form of this balance/diversity is the wide range of relevant areas of expertise – e.g., fluid dynamics, heat and mass transfer, diesel generators, materials, civil engineering, chemical engineering, health physics. Another form of balance/diversity is the fact that membership comes from academia, the national labs, and the regulated industry. The ACRS particularly values people with actual plant operational experience.

Both the ACRS and ACMUI have selection panels made up of NRC staff. For ACRS and ACMUI slots, the Commission publishes a notice in the *Federal Register* announcing that the NRC will consider nominations and applications for a vacancy. The Commission also places notices in the trade press. The nominations and applications are screened by the selection panel and a small group (for ACRS, usually 8-16 candidates) is chosen for interviews. After interviews are completed, the panel recommends and rank-orders 3-4 people for the vacant slot. The Commission itself makes the final choice, usually selecting the panel's first choice. The process is similar for ACMUI slots, but

²⁵¹ See Interview with Andrew Bates, *supra*, answer to question 4.

the final decision maker is the Director of FSME. And like the ACRS, the ACMUI seeks a diverse membership – e.g., cardiology, thyroid diseases, oncology, and a patient advocate.

*Interview with Messrs. Geary Mizuno & Brad Jones*²⁵²

Q: If a science advisory committee (or advisory review board) is consulted in the rulemaking process, what triggers this process? How often are they consulted? At what stage of the rulemaking?

A: Advisory Committees do play a role in rulemaking. But the ACRS role has evolved from what was done historically. The ACRS consults with the Commissioners, as required by statute. Its main focus in terms of volume of work relates to power reactors, but they also review waste issues. It also considers the production of medical isotopes that are produced within a “power reactor” that was created solely to create such isotopes (the ACMUI is not involved in the production aspect of medical isotopes).

The ACRS used to review rules at both the proposed and final stages. They are responsible (in addition to their role on individual licensing actions) for reviewing rules that involve proposed reactor safety standards. To promote efficiency, they are given the option to review the proposed rule, and are later sent the final rule for review. In instances in which the proposed rule involves significant technical issues, the ACRS may choose to provide detailed review and comments to the staff at the proposed stage, or may indicate a desire to only review after the staff has received and considered public comment in the final rule stage. The ACRS reports to the Commission and has annual meetings with the Commission giving it several avenues to propose rules be considered, as well as commenting on rules already in development.

The ACMUI receives an informational copy of a proposed rule within its purview and has a chance to comment on any final rule within its purview before it goes up to the Commission. The ACMUI, unlike the ACRS, reports to the Director of FSME with a primary role of advising the staff on medical issues and it also can recommend that the staff initiate a rulemaking. Mr. Jones

²⁵² Brad Jones is the Assistant General Counsel for Reactor and Materials Rulemaking. Geary Mizuno is Special Counsel for Reactor and Materials Rulemaking.

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does not recall any instance where a rule involving medical treatment was not reviewed by the ACMUI. If the ACMUI writes a letter regarding a proposed rulemaking, it goes to FSME. If FSME agrees with the ACMUI's comments, then FSME would have to send up a SECY Paper asking the Commission to add the proposed rulemaking to the Commission's list of potential rules. On occasion, the Commission will ask the ACMUI to look into a particular issue. One recent example may have been the use of cesium to sterilize blood. Either the ACMUI independently looked, or the Commission asked it to look, at the National Academy of Sciences study on that issue.²⁵³

In the realm of materials licenses, no advisory committee exists. The Commission does, however, use "working groups" that can include outside experts (such as a medical advisor), the relevant NRC offices and also the agreement states (states that have signed agreements with the NRC to regulate materials licensees within their borders according to the Commission's own standards). These working groups do not include licensees or public interest groups, though the working groups may determine to have public meetings to get comments in developing a rule and can share draft rule language with the public in order to facilitate the public meetings. The Committee to Review Generic Requirements (CRGR) once reviewed rulemakings but no longer does so. Now it reviews exclusively individual licensing issues.

Because of resource restrictions the Commission does not generally update its rules unless the rule's obsolescence or error has health or safety significance. Consequently, the Commission's rules contain areas where it is recognized that updates or corrections are needed, but those corrections or updates may not take place until an appropriately high priority rulemaking is otherwise initiated for the section needing updates or corrections. Certain minor administrative corrections (addresses, titles etc) can be done in a non-resource intensive administrative rulemaking.

²⁵³ In an e-mail (Dec. 8, 2011, 3:42 p.m.), Dr. Andrew Bates further observed that The ACMUI review of the National Academy report was done based on staff request. Ashley [Cockerham, of the NRC's FSME] does not recall any direct request from the Commission to the ACMUI (at least back to 2007) to look at an issue. What the Commission has done is ask the staff to consult with the Committee.

ATTACHMENT B: E-MAILS CITED IN THIS ARTICLE²⁵⁴

*E-mail from Dr. Bates to Roland Frye
(Nov. 1, 2011, 4:39 p.m.),
together with e-mail from Roland Frye to Dr. Bates
(Nov. 1, 2011, 4:22 p.m.):*

Rollie – Your source is wrong. I know for fact that LSNARP has been continuously Chartered, I signed Charters and submitted them to GSA.

Whoever did the NUREG report was in error.

Andy

From: Frye, Roland
Sent: Tuesday, November 01, 2011 4:22 PM
To: Bates, Andrew
Subject: a follow-up to Wednesday's conversation

Andy,

I ran across a source that at least appears to conflict with your conclusion that LSNARP is still alive—though in a coma.

Section 1.19(d) of the Commission's regulations provides that the Commission established this Panel in 1989, pursuant to 10 C.F.R. § 2.1011(e). The Commission directed that it be absorbed into the ACRS around 2004-05. NUREG-1125, Volume 27, "A Compilation of Reports of the Advisory Committee on Reactor Safeguards: 2005 Annual," (June 2006), at 89 (ADAMS Accession No. ML061780504).

Can you clarify this for me? Is it possible that it was absorbed into the ACRS in 2004-05 but re-chartered as a separate committee in 2010?

Thanks,
Rollie

*E-mail from Dr. Bates to Roland Frye
(Nov. 4, 2011, 10:50 a.m.):*

²⁵⁴ All emails in Appendix B appear in their original, unedited form.

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Rollie – I have added comments to your write-up below and attached a number of ACRS and Staff documents.

If you have further questions, I will try to address.

Andy

*E-mail from Dr. Bates to Roland Frye
(Dec. 8, 2011, 2:17 p.m.):*

Rollie –

[rmf2] I am not sure how you want to reconcile this. ACRS Charter states that the committee reports to the Commission, yet under practice it writes its reports to the Commission and EDO as you have described further on in report. Likewise ACMUI reports to Director Division of . . . , FSME by Charter, but does meet with Commission, usually once a year. I think I would use the Charter as the basis for who they report to.

[rmf3] Correct – delete the sentence

[rmf4] The Charter that you found in ADAMS referenced in the footnote (ML083170615) was a draft the was never finalized. The correct ADAMS reference should be to ML083460423 which is public and has the paragraph in question at 2.h - the html version on the WEB somehow got the a, b, c, Subparts of the paragraphs switched to numbers so 2.8 is the corresponding paragraph.

[rmf5] I was OK with the rest of it. (You did pick up my edit at top of pg 3 on ACRS with maximum of 15 members and edits on expertise but did not include my change on operational experience.)

Andy

*E-mail from Dr. Bates to Roland Frye
(Dec. 8, 2011, 2:34 p.m.):*

Rollie – On your first question, I don't know whether the ACMUI took the issue up based on Commission, staff or their own interest.

Ashley – Can you shed light on this? (Ashley, Rollie is NRC/OCAA employee doing a study of use of FACA committees for ACUS)

On your second question, I would characterize the Nevada Nuclear Waste Task Force as a Public Interest group but they do not represent the public as a whole. They did become a party to the HLW proceeding as an opposition group.

Andy

*E-mail from Dr. Bates to Roland Frye
(Dec. 8, 2011, 3:42 p.m.):*

Rollie – A further follow up to your ACMUI question based on phone conversation I had with Ashley Cockerham.

The ACMUI review of the National Academy report was done based on staff request. Ashley does not recall any direct request from the Commission to the ACMUI (at least back to 2007) to look at an issue. What the Commission has done is ask the staff to consult with the Committee.

Andy

*E-mail from Andrew Bates to Roland Frye
(Feb. 13, 2012, 9:30 a.m.),
together with e-mail from Roland Frye to Dr. Bates
(Feb. 13, 2012, 9:08 a.m.).*

Rollie – I can't think of other cases.

From: Frye, Roland
Sent: Monday, February 13, 2012 9:08 AM
To: Bates, Andrew
Subject: Q

Andy, Would it be accurate to conclude that (i) the Pilot Program Evaluation Panel and (ii) the Reactor Oversight Process Initial Implementation Evaluation Panel are the only exceptions to the general rule that NRC personnel do not serve on NRC FACA-chartered advisory committees? Thanks, Rollie