



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

April 24, 2018

MEMORANDUM TO: Adrian Muñoz, Acting Chief
Licensing Branch 3
Division of New Reactor Licensing
Office of New Reactors

FROM: Barbara Hayes, Project Manager **/RA/**
Licensing Branch 3
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: SUMMARY OF PUBLIC MEETING WITH NUCLEAR ENERGY
INSTITUTE REGARDING AVOIDING DELAYS IN ISSUANCE OF
THE NUCLEAR REGULATORY COMMISSION COMBINED
LICENSES

On March 28, 2018, staff from the U.S. Nuclear Regulatory Commission (NRC) conducted a Category 2 public meeting with the Nuclear Energy Institute (NEI) and other stakeholders to discuss NEI's proposed examples of the potential use of license conditions to avoid delays in combined license (COL) issuance when the COL application references a design certification (DC) with errors. The NEI examples can be found in a document received on March 8, 2018 entitled "*NEI Examples: Use of COL License Conditions to Address Significant Errors in a Referenced Design Certification*," available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. [ML18068A406](#).

BACKGROUND

The March 28, 2018, public meeting was part of a continuing dialogue between NEI and NRC on a topic that first arose in 2014. The preparation and discussion of examples was a recommended next step from a December 13, 2017, public meeting on the issue, for which the summary can be found under ADAMS Accession No. [ML18011A037](#). The December 2017 public meeting focused on three generic approaches suggested by NEI in an

CONTACT: Barbara Hayes, NRO/DNRL
301-415-7442

August 4, 2017, letter entitled “*Avoiding Delays in Issuance of NRC Combined Licenses due to Design Certification Errors*” (ADAMS Accession No. [ML17236A489](#)). The use of license conditions was NEI’s preferred option of the three approaches proposed by NEI in their August 2017 letter. The examples were developed by NEI for discussion and consisted of scenarios related to technical problems that had been encountered in COL applications in the past that referenced the AP1000 DC in Title 10 *Code of Federal Regulations* (10 CFR) Part 52, Appendix D, “Design Certification Rule for the AP1000 Design”.

The March 28, 2018, public meeting also included discussion of the December 2017 public meeting as well as a letter that NRC sent on February 28, 2018, (*Supplemental Response Related to the Nuclear Energy Institute’s Letter, “Avoiding Delays in Issuance of NRC Combined Licenses due to Design Certification Errors”, dated August 4, 2017*) which can be found under ADAMS Accession No. [ML18031B302](#). Meeting attendees included representatives from NEI, members of the public, staff from technical and licensing branches of NRC’s Office of New Reactors, and staff from NRC’s Office of General Counsel. The attendees list is shown in Enclosure 1.

MEETING SUMMARY

NRC and NEI Discussion of General Issues Related to NEI’s Three Examples

NRC opened the meeting by presenting select information from the December 2017 public meeting as well as NRC’s supplemental letter from February 2018 due to their relevance to the discussion of the examples. At the public meeting in December 2017, the license condition approach was described by NEI as one that would typically include an acceptance criteria and a methodology already approved as Tier 2 information in the design control document (DCD). NRC’s supplemental letter of February 2018 indicated that examples should have sufficient information to support a safety finding without the need for a post-COL license amendment or similar approval. Given that all three of the written examples involve a planned license amendment, the NRC recommended that discussion of the examples include the extent to which a later safety evaluation (SE) would be needed and whether the examples could be modified to avoid the need for a later SE.

NEI indicated that for cases involving Tier 2 information in the DCD, a license condition without a license amendment was possible. NEI stated their opinion that the NRC interpretation regarding the “ministerial act standard” and post-COL license amendments expressed in the February 2018 supplemental letter was overly restrictive and provided no safety benefit. NEI reiterated several key points from the public meeting of December 2017 regarding their examples as follows:

- COL safety findings are predictive and thus the reasonable assurance finding can be based on a future process,
- flexibility within the regulations is possible and should be applicable,
- hearing rights are preserved, and
- clear acceptance criteria are included.

The NRC responded that the Commission's decision related to Hydro Resources (CLI-00-08, 51 NRC 227) explicitly rejected reliance on a later license amendment. Also, the NRC responded that NRC regulations and the Atomic Energy Act of 1954, as amended, require a final safety finding to issue a COL. The NRC further stated that though NRC has discretion in terms of the quantity of information needed to support a safety finding, a license condition would need to be ministerial and avoid a complex post-license technical review.

At the end of the discussion, NEI acknowledged that it was asking for reconsideration of the Commission's license condition policy.

NRC and NEI Discussion of Example 1

NEI's first example was related to the hydrogen venting system for which the inspections, tests, analyses, and acceptance criteria (ITAAC) in the DC were not consistent with the actual final design of the system. The proposed license condition would require the licensee to (1) process departures from the generic DCD based on updated analyses and 2) obtain a license amendment that corrects the ITAAC and revises the Tier 2 information wording in the DCD before closure of ITAAC 2.3.9, Item 3(iii).

An NRC staff member inquired why this example was chosen out of approximately eleven (11) possibilities. During discussion, it was agreed that the error was relatively less complex than the condensate return error. Still the NRC expressed its belief that an SE would be needed since the risks associated with the different configuration of the system would need to be reviewed. The staff further pointed out that a LAR late in the construction phase could be problematic due to construction sequencing for concrete elements. NEI agreed but stated that this would be a licensee risk. The staff member pointed out that the problem is more complex than it appears due to reconfiguration constraints late in the construction phase.

NRC and NEI Discussion of Example 2

NEI's second example was related to non-conservative or incorrect assumptions regarding initial conditions, boundary conditions and potential sources of radiation used in the main control room (MCR) dose calculations. The proposed license condition would require the licensee to (1) process departures from the generic DCD based on updated analyses using a methodology established in an appropriate NRC regulatory guide and 2) obtain a license amendment that revises the Tier 2 information wording to reflect the updated MCR design in the DCD before closure of ITAAC 2.2.5, Item 7.

The NRC indicated that example 2 appeared to be the most problematic because of the applicant's difficulties in demonstrating satisfactory compliance with General Design Criterion (GDC) 19 during the application review phase.

NRC and NEI Discussion of Example 3

NEI's third example was related to a lack of compliance with a standard for safety systems that is incorporated by reference in 10 CFR 50.55a(h), "Codes and standards". The AP1000 Protection and Safety Monitoring System did not comply with IEEE 603-1991 requirements such that design changes would be required and technical specifications (TSs) would need to be revised. The proposed license condition would require a licensee to process departures from the generic DCD and obtain a license amendment at least two years prior to the finding under

10 CFR 52.103(g) "Operation under a combined license" that would 1) modify the design, 2) revise Tier 2 information wording, figures and tables and 3) revise TSs.

The NRC indicated that example 3 might to be the least problematic due to the DCD's reliance on a regulatory standard, if the error was at a level of detail below what the staff relied on for its finding. The NRC discussed examining the safety evaluation report to determine what the staff's basis for approval was. The NRC also discussed whether criteria could be developed, possibly based on risk or safety considerations, that would narrow the need for a staff review of error resolution before licensing. NEI replied that it supports developing criteria to winnow down the issues needing to be resolved before COL issuance, but NEI has not focused on that because there might be examples that cannot be winnowed out, and there should be a process to address such examples.

Final Discussion, Next Steps and Conclusion of the Public Meeting

Final discussion of the three examples suggested that though all three required a safety finding associated with a later license amendment, there were fundamental differences that might impact any post-COL safety analysis.

The NRC suggested that the proposed license conditions included a promise to resolve the errors in the future but did not provide a sufficient substantive basis to support licensing. The NRC and NEI then discussed alternative licensing strategies that are different from the traditional licensing basis approach. NEI stated that perhaps a middle ground approach could be adopted. NEI also stated that if acceptance criteria and a methodology were agreed to, then maybe the remaining issue is just level of detail, which can be worked out. The NRC acknowledged that the struggle was in finding a middle ground and how much justification is needed to go forward. NEI further asked whether there was something that could be done to provide greater confidence to the staff e.g. by referencing risk or safety margins. Is there a process that could provide reasonable assurance with less than 100 percent resolution, e.g. a predictable post-COL license amendment without surprises? NRC noted that it would be hard to determine whether a promised safety resolution is likely to be attainable before the detailed resolution has been submitted.

NEI indicated that NEI will likely send a letter to the Commissioners and suggested that the staff prepare a white paper or other communication to the Commission. The NRC indicated that the staff will need to convene decision makers in order to decide next steps and develop a schedule for additional activities, if any. NEI noted that there are no applicants currently impacted.

In closing, the NRC staff inquired if there were any comments or questions from the general public but received no response, upon which, the meeting was adjourned.

Enclosure:
Meeting Attendees List

cc w/encl: See next page

SUBJECT: SUMMARY OF PUBLIC MEETING WITH NUCLEAR ENERGY INSTITUTE
REGARDING AVOIDING DELAYS IN ISSUANCE OF THE NUCLEAR
REGULATORY COMMISSION COMBINED LICENSES

DATED: April 24, 2018

DISTRIBUTION:

PUBLIC
Reading File
RidsOgcMailCenterResource
RidsAcrsAcnwMailCtr
RidsNroDnrl
RidsNroLb3
RidsNroOd
BAbramowitz
DHabib
MSpencer

ADAMS Accession No: ML18092A066

NRO-002

OFFICE	PM:NRO/DNRL/LB3	LA:NRO/DNRL/LB3
NAME	BHayes	BAbeywickrama (SGreen* for)
DATE	4/24/2018	4/10/2018

OFFICIAL RECORD COPY

List of Participants

Public Meeting with NEI on Avoiding Delays on Issuance of NRC COL

March 28, 2018

NAME	ORGANIZATION
Bell, Russel	NEI
Tschlitz, Mike	NEI
Akstulewicz, Frank	NRC
Hayes, Barbara	NRC
Habib, Don	NRC
Jana Bergman	Curtiss-Wright
Frantz, Steve	Representing NEI
Waters, Dave	Duke Energy (via phone)
Lighty, Ryan K.	Morgan, Lewis, & Bockius LLP
Cottingham, Anne	NEI
Wagner, Erik	Duke Energy (via phone)
Scott, Roger	Tennessee Valley Authority (via phone)
Altman, Anna	Southern Nuclear Operating Company (SNC) (via phone)
Spencer, Michael	NRC
Lavera, Ron	NRC
Patel, Pravin	NRC
Becker, Gary	NuScale Power, LLC (via phone)

Enclosure

NEI New Reactors Mailing List

(Revised 03/06/2018)

cc:

Mr. Gary Wright, Director
Division of Nuclear Facility Safety
Illinois Emergency Management Agency
1035 Outer Park Drive
Springfield, IL 62704

NEI New Reactors Mailing List

Email

4pareez@gmail.com
Alan.Levin@areva.com (Alan Levin)
awc@nei.org (Anne W. Cottingham)
awyche@bechtel.com (Altheia Wyche)
bellesrj@ornl.gov (Randall Belles)
bendoj@asme.org (John Bendo)
Betsy Langille (ealangille@tva.gov)
bevans@enercon.com (Bob Evans)
bevardbb@ornl.gov (Bruce Bevard)
Bojan.Petrovic@gatech.edu (Bojan Petrovic)
brian.turner@oca.iowa.gov (Brian Turner)
BSims@Becht.com (Robert Sims)
bwwaites@southernco.com (Brandon Waites)
carey.fleming@cenglic.com (Carey Fleming)
ccmsc@verizon.net (Mike Callahan)
cee@nei.org
collinlj@westinghouse.com (Leslie Collins)
cposlusny@babcock.com (Chester Poslusny)
CumminWE@Westinghouse.com (Edward W. Cummins)
curtisslaw@gmail.com (Jim Curtiss)
cwaltman@roe.com (C. Waltman)
david.distel@exeloncorpo.com (David J. Distel)
david.hinds@ge.com (David Hinds)
david.lewis@pillsburylaw.com (David Lewis)
david.newland@cnsccsn.gc.ca (David Newland)
dchapin@mpr.com (Douglas Chapin)
DeLaBarreR@state.gov (R. DeLaBarre)
dianed@nirs.org (Dianed)
don.tormey@iub.iowa.gov
donald.woodlan@luminant.com (Donald Woodlan)
dpstout@tva.gov (Daniel P. Stout)
draleigh@curtisswright.com (Denna Raleigh)
ecullington@earthlink.net (E. Cullington)
ed.burns@earthlink.net (Ed Burns)
eddie.grant@excelservices.com (Eddie Grant)
elyman@ucsusa.org (Ed Lyman)
erg-xl@cox.net (Eddie R. Grant)
esmith@moenviron.org (Edward Smith)
ewallace@nuscalepower.com (Ed Wallace)
F.Shahrokhi@areva.com (Farshid Shahrokhi)
fletcher@exchangemonitor.com

NEI New Reactors Mailing List

garent@tva.gov (Gordon Arent)
George_Stramback@Charter.net (George Stramback)
ggeaney@mpr.com (George Geaney)
gyoung4@entergy.com (Garry Young)
hankwon.choi@wgint.com (Hankwon Choi)
hickste@earthlink.net (Thomas Hicks)
hwilchins@epsilonsystems.com (Howard Wilchins)
jack.kasper@parsons.com (Jack Kasper)
jahalfinger@babcock.com (Jeff Halfinger)
james1.beard@ge.com (James Beard)
james2.ross@ge.com (James Ross)
jason.parker@pillsburylaw.com (Jason Parker)
jennifer.easler@oca.iowa.gov (Jennifer Easler)
jgutierrez@morganlewis.com (Jay M. Gutierrez)
Jim.Kinsey@inl.gov (James Kinsey)
jim.sundermeyer@iub.iowa.gov
jmr@nei.org (Jeannie Rinckel)
JNR@NuScalePower.com (Jose N. Reyes)
john.elnitsky@duke-energy.com (John Elnitsky)
john.holt@nreca.coop (John Holt)
john.oneill@pillsburylaw.com (John O'Neill)
Joseph_Hegner@dom.com (Joseph Hegner)
jrappe@nuscalepower.com (Jodi Rappe)
jwh@nei.org (Jerry Hiatt)
jwh1@nreca.coop (John Holt)
kahtan1234@yahoo.com
KAK@nei.org (Kimberly Keithline)
kerri.johannsen@iub.iowa.gov
klingscl@westinghouse.com (Charles Kling)
kouhestani@msn.com (Amir Kouhestani)
kra@nei.org (Katie Austgen)
KSutton@morganlewis.com (Kathryn M. Sutton)
kwaugh@impact-net.org (Kenneth O. Waugh)
Kwelter@NuScalePower.com (Kent Welter)
larry.stevens@iub.iowa.gov
lchandler@morganlewis.com (Lawrence J. Chandler)
libby.jacobs@iub.iowa.gov
mack.thompson@iub.iowa.gov
marcel.deVos@cnscccsn.gc.ca (Marcel DeVos)
marilyn.kray@exeloncorp.com
mark.holbrook@inl.gov (Mark Holbrook)
martha.shields@nuclear.energy.gov (Martha Shields)
media@nei.org (Scott Peterson)

NEI New Reactors Mailing List

mgiles@entergy.com (M. Giles)
mirskys@saic.com (Steven Mirsky)
MSF@nei.org (Marvin Fertel)
murawski@newsobserver.com (John Murawski)
nirsnet@nirs.org (Michael Mariotte)
Nuclaw@mindspring.com (Robert Temple)
P.Stefanovic@Holtec.com (Peter Stefanovic)
patriciaL.campbell@ge.com (Patricia L. Campbell)
paul.gallagher@parsons.com (Paul Gallagher)
Paul@beyondnuclear.org (Paul Gunter)
pbessette@morganlewis.com (Paul Bessette)
pcarlone@mpr.com (Pete Carlone)
peter@hastings-group.com (Peter Hastings)
phg@nei.org (Paul Genoa)
PLorenzini@NuScalePower.com (Paul Lorenzini)
poorewpiil@ornl.gov (Willis P. Poore III)
pshastings@tva.gov (Peter Hastings)
ramana@Princeton.EDU (M. V. Ramana)
richard.sweigart@duke-eneergy.com (Richard Sweigart)
RJB@NEI.org (Russell Bell)
robert.haemer@pillsburylaw.com (Robert Haemer)
robert.kitchen@duke-energy.com (Robert H. Kitchen)
ronald.polle@oca.iowa.gov
rritzman@firstenergycorp.com (R. Ritzman)
RSnuggerud@NuScalePower.com (Ross Snuggerud)
rxm@nei.org (Rod McCullum)
sabinski@suddenlink.net (Steve A. Bennett)
shobbs@enercon.com (Sam Hobbs)
siciliatom@hotmail.com (Mark Campagne)
stephen.markus@pillsburylaw.com (Stephen Markus)
steven.hamrick@fpl.com (Steven Hamrick)
swender@FirstEnergyCorp.com (Samuel Wender IV)
swkline@bechtel.com (Steve Kline)
tedquinn@cox.net (Ted Quinn)
tgado@roe.com (Burns & Roe)
timothy.beville@nuclear.energy.gov (Timothy Beville)
tjhester@midamerican.com (Tom J. Hester)
tjk@nei.org (T.J. Kim)
troche@absconsulting.com (Thomas Roche)
trsmith@winston.com (Tyson Smith)

NEI New Reactors Mailing List

Vanessa.quinn@dhs.gov (Vanessa Quinn)
vince.gilbert@excelservices.com (Vince Gilbert)
vka@nei.org (Victoria Anderson)
wayne.marquino@gmail.com (Wayne Marquino)
whorin@winston.com (W. Horin)
william.mcint.com (William Mctigue)
wwbx@hyperionpowergeneration.com (Willis Bixby)
x2gabeck@southernco.com (Gary Becker)