NUCLEAR ENERGY INSTITUTE

Adrian P. Heymer
Executive Director, Fukushima Response
Coordination & Strategy

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Ms. Tremaine Donnell
NRC Clearance Officer
Office of Information Services
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Comments of the Nuclear Energy Institute on NRC Information Collection Activities (Docket No. NRC-2012-0081)

Project Number: 689

Dear Ms. Donnell:

On behalf of the nuclear industry, NEI[1] is pleased to have the opportunity to comment on the NRC's proposed collection of information. Since March 12, 2012, when these information collections were originally issued by the NRC, the nuclear industry has expended significant resources in developing responses to the NRC's information requests. To date, the nuclear industry has already developed and submitted for the NRC's review several generic guidance documents that will be used in responding to the requests. Additionally, the industry has submitted preliminary initial responses to the NRC for information requests related to emergency preparedness and flooding.

Notwithstanding industry's continuing commitment to comply with the NRC's information requests, the NRC should appreciate that the burden estimates identified by the NRC in its Draft Supporting Statement generally and significantly underestimate the burden that will be imposed on industry by its information requests. Many of the information requests seek information that is not readily available or "off the shelf," but will require detailed, sophisticated analyses that in some instances will take a number of years and substantial resources to complete. Specific details and an explanation of how these estimates were reached regarding each of the six areas contained within the NRC's requests for information are provided in the attachment to this letter, but are summarized below.

1) **Overall Burden per Site**: Though there are numerous variables that could affect the total hours that each site will need to expend to respond to all of the NRC's information requests, the total hours per site are estimated to be between 30,101 to 45,239.

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[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the industry, including regulatory matters as well as generic operational and technical issues. NEI's members include all entities licensed by the NRC to operate commercial nuclear power plants in the United States, nuclear plant designers, architect/engineering firms, fuel fabrication facilities, materials licensees and other organizations and individuals involved in the nuclear energy industry.

2) **Seismic Hazard Evaluations**: It is not currently possible to precisely estimate the burden that will be imposed on each site as a result of the information request for seismic hazard evaluations. However, based on recently completed hazard evaluations for new nuclear power plants, the seismic risk assessment component of the information request could require anywhere from 15,000 to 30,000 hours per site to complete.
3) **Flooding Hazard Evaluations**: Industry estimates that these evaluations will, on average, take a total of 8,699 hours per site to complete. This includes an average of 2,589 hours of work by the utilities themselves combined with 6,110 hours of work that will need to be done by vendors.
4) **Seismic Walkdowns**: Industry estimates that the seismic walkdowns and related activities will require, on average, approximately 2,000 per site to complete.
5) **Flooding Walkdowns**: Industry estimates that these walkdowns will require an average of 3,904 hours per site to complete these walkdowns, with a low estimate of 3,318 hours, and a high estimate of 4,489 hours.
6) **Emergency Preparedness Analyses**: Industry estimates that responses to the information requests related to emergency preparedness (including both communications and staffing analyses) will require approximately 498-636 hours per site.

As more specifically described in the attachment to this letter, the work associated with many of these information requests – particularly with respect to seismic and flooding evaluations - requires detailed analyses that cannot generally be developed or completed by licensees without the assistance of vendors who specialize in such matters. The estimates include the significant time and effort expended by NEI on coordinating and directing industry Fukushima response activities. In addition, the complete scope of work is not defined. It is dependent on the results and conclusions of licensee analyses that will be the subject of NRC review and approval.

The industry appreciates the opportunity to comment on the resource estimates for responding to NRC actions related to the lessons learned from the Fukushima Dai-ichi accidents. We are willing to discuss these estimates with NRC staff, if that is necessary.

If you have questions, please contact Jason Zorn at jcz@nei.org; 202-739-8144.

Sincerely,

Adrian P. Heymer

Attachment

Comments of the Nuclear Energy Institute on NRC Information Collection Activities (Docket No. NRC-2012-0081)

1) Overall Burden per Licensee (In hours):

The following table summarizes the total burden that has been and will be imposed on NRC licensees as a result of the requests for information that were issued on March 12, 2012. As this data demonstrates, the NRC significantly underestimated the total burdens to be imposed by these information collections on individual sites and on the industry collectively.

	Seismic Evaluation	Flooding Evaluation	Seismic Walkdown	Flooding Walkdown	EP Comms. and Staffing	Totals
NRC Estimates	3,440 to 9,260	1,300	2,000	2,000	100	8,840 (low) to 14,660 (high)
Industry Estimates	**15,000 to 30,000***	**8,699**	**2000**	**3,904**	**498 or 636**	**30,101 (low) to 45,239 (high)**

**This coarse estimate only represents one element of the evaluation activity – the risk assessment.*

2) Seismic Hazard Evaluation:

The NRC's request for information regarding seismic hazard evaluations contains two parts. First, licensees were asked to perform a Seismic Hazard Reevaluation and submit a report to the NRC that includes a set of new hazard curves and additional information associated with site soil profiles, amplification functions, and response spectra. The information request seeks submission of that report within 18 months or 3 years, depending on whether the plant is located in the Central and Eastern U.S. or the Western U.S. Second, depending on the results of the Hazard Reevaluation, some licensees (possibly as many as 70 percent) will be expected to complete a Seismic Margin Assessment or Seismic Probabilistic Risk Assessment. Submission of those additional evaluations is requested within 3 to 4 years of the licensee's submittal of the Hazard Reevaluation Report.

Developing accurate estimates for the burdens associated with responding the seismic-related information requests is challenging because the specific details of what such evaluations will require are still under development. This is particularly a challenge for estimates associated with the Hazard Reevaluations. **Currently, industry has no clear basis to challenge the estimates of 1420 hours per Central and Eastern U.S. sites and 2,850 hours per Western U.S. sites.** However, we question whether the NRC's proposed estimates are accurate since the agency's ability to estimate the burden is subject to the same limitations as industry.

However, industry estimates that the Seismic Margin Assessment or Seismic Probabilistic Risk Assessment could require 15,000 to 30,000 hours per site to complete. These estimates are largely based on industry experiences with recent seismic risk assessments completed for new reactor facilities such as the Vogtle combined operating license (COL). NEI provided estimates of burdens associated with a Seismic Probabilistic Risk Assessment in a letter to the NRC dated February 28, 2012. Consistent with the information provided in that letter, the large

range of estimates is due to uncertainties associated with defining the actual scope of work since the guidance is still being developed. Furthermore, it is not possible to know now exactly how many plants will need to perform Seismic Margin Assessments or Seismic Probabilistic Risk Assessments, because the evaluation guidance has not been finalized and the trigger for performing seismic risk assessments is based on the results on the evaluations. The number of plants needing to perform risk assessments could be as high as 70 percent. In contrast, the NRC estimates that no more than one third of plants will be required to conduct a Seismic Margin Assessments or Seismic Probabilistic Risk Assessments. At a minimum, the NRC's estimate of the burden associated with that step of the information request response should be provided as a range of estimated burden consistent with the expected range of estimates.

3) Flooding Hazard Evaluation

The NRC's request for information with respect to flooding hazard evaluations contained two components. First, licensees were asked to perform a Flood Hazard Reevaluation and submit a report to the NRC that included identification of interim actions that the site had taken or planned to take. The information request seeks submission of that report within 1 to 3 years from the date of the request, depending on the NRC's prioritization of sites.

Industry estimates that responses to the Flood Hazard Reevaluation component of the information requests will, on average, take a total of 8,699 hours per site to complete. This includes an average of 2,589 hours of work by the utilities themselves combined with 6,110 hours of work that will need to be done by vendors. In addition, the NRC's burden estimates do not seem to account for the possibility that some licensees will be required to complete an Integrated Assessment depending on the results of their site specific Flood Hazard Reevaluation. Industry estimates are variable depending on the scope of the work required, but as reflected in the table below, on average, **an Integrated Assessment that would include both protection and mitigation measures would require approximately 9,160 hours on average to complete. In sum, a licensee who was required to complete both a Flood Hazard Reevaluation as well as an Integrated Assessment might be required to expend, on average, 17,859 hours to respond the NRC's information request.**

In contrast to the industry's burden estimates, the NRC estimated that it would take only approximately 1,300 hours for each licensee to respond to the NRC's information request with respect to conducting a site specific flooding evaluation.

The tables below contains a specific breakdown of the burden estimates for the Hazard Reevaluations, separated between vendor and utility work, as well as estimates for completion of integrated assessments:

Flood Hazard Reevaluation: Time Required by Licensees (Per site)

Activity	Man-Hour	Man-hour	Man-Hour
	Range	Low	High
1. Collect current FSAR and any past updates	20	20	20
a. Review applicable Regulatory Guides			
2. Review flood evaluation sections of FSAR:	24	24	24
a. Section 2.4, other as appropriate			
b. Determine from item a. what calculations			
should be made to support flood analysis			
3. Collect supporting calculations:	16 - 80	16	80
a. All supporting calculations available/ or what is			
missing			
b. Determine if calculations meet current QA			
requirements			
4. Evaluate what additional work is needed from vendor:	40 - 160	40	160
a. All calculations have to be updated - non-QA			
b. Analysis that were not done for the licensing basis			
c. Develop list of work elements that will be			
required			
d. Develop RFP to define work for vendor bid			
5. Bidding process:	48 - 120	48	120
a. Pre-bid meeting to define work			
b. Establish criteria for vendor selection			
c. Review of bids and selection			
	Total	**148**	**404**
Owner Calculation Review (1 Calculation)	32 - 48/calc		
1. Review of individual calculation for completeness,			
consistent with QA requirements, and technical			
content			
2. Prepare list of comments/questions for resolution			
by vendor			
3. Follow-up review of calculations for comment			
resolution			
4. Complete calculation internal sign-off as required by QA requirements			
Estimated Calculations/Flood Analysis (20 - 70)			
Low End 20 Calc/Study	320 - 480	320	480
High End 70 Calc/Study	2240 - 3360	2240	3360
Alternately, use 30% of the vendor effort		**873**	**2793**
Draft response to 50.54(f) letter		**320**	**640**

Industry average flood evaluation effort per site: (some sites could be considerably higher)		Low	High	Average
(Uses alternate approach above – 30% of vendor effort)	Utility manhrs	1341	3837	**2589**
(Breakdown of vendor effort is shown in the table below)	Vendor manhrs	2909	9311	**6110**

Flood Hazard Reevaluation: Time Required by Vendors (by site)

Flood Evaluation Vendor activities	Low estimate	High Estimate	Average
Site walkdown and research	200	500	350
Local precipitation (PMP)	1000	1600	1300
River flood (PMF)	1000	5000	3000
Dam failure	600	2000	1300
Ice effect	200	1500	850
Surge and seiche	400	2500	1450
Tsunami	200	3500	1850
Wave run-up	1000	2000	1500
Sites with COL Docketed	1200	2100	1650
Complicated sites (on coast or lake with nearby river)	4000	16600	10300
River site with dams	4000	12600	8300
River site with no dams	2400	8600	5500
Coastal site	2800	10100	6450
Lake site	2600	6600	4600
Land bound site	1200	2100	1650
Number of sites with COL Docketed: 11 Combined hazard complicated sites: 6 Number of river sites with dams: 20 Number of river sites without dams: 8 Number of coastal sites: 9 Number of lake sites: 9 Number of land bound sites: 1			
	Low	**High**	**Avg**
Industry average man hrs for vendor flood evaluation effort per site	**2909**	**9311**	**6110**

Flooding Integrated Assessment (per site)

	Flooding Hazards Vulnerabilities evaluation - Utilizing Integrated Assessment Guidance	Number of personnel assigned	Number of weeks for the task	Number of hours per week	Man hours totals	Man hours totals -30 %	Man hours totals +50%
	Evaluate and document operability and reportability issues that arise during analysis using current day acceptance criteria (Assume 6 issues require 2 people for 2 weeks each)	2	12.0	40	960	672	1440

	Identify and screen for feasibility, modifications to protect plant equipment to a new PMF design basis level using Integrated Assessment strategy	2	12.0	40	960	672	1440
	Perform scoping analysis of selected prevention modifications to develop +/- 50% cost estimates	5	16.0	40	3200	2720	4800
	Identify and screen for feasibility, modifications to mitigate the consequences a new PMF design basis level Integrated Assessment strategy	2	12.0	40	960	816	1440
	Perform scoping analysis of selected mitigation modifications to develop +/- 50% cost estimates	5	16.0	40	3200	2720	4800
	Select strategy for protection and mitigation of the PMF design basis	3	8.0	40	960	816	1440
	Develop Integrated Assessment strategy with Protection and Mitigation of PMP event	3	4.0	40	480	408	720
	Obtain approval of strategy	2	4.0	40	320	272	480
	Prepare and Approve Response	2	4.0	40	320	272	480
	Total estimated resources for a site requiring protection and mitigation				**11360**	**9368**	**17040**
	Total estimated resources for a site requiring protection				**6960**	**5628**	**10440**
	Industry average integrated assessment effort per site assuming even split between protection only and protection and mitigation	**9160**					

The burden estimates for flooding evaluations were developed by an industry task force that was established specifically for purposes of responding to the NRC's requests for information specific to flooding. Members of the task force were chosen for their expertise in the area of flooding, engineering analysis, and plant walkdowns, and was comprised of senior engineers and engineering managers from approximately 15 different utilities. To understand the scope of the work that would be required to respond to the information requests, the task force met with multiple vendors who have previously done flooding evaluations for new and existing nuclear power plants.

In addition, several assumptions were used to suppose which type of evaluation would be required for each site to meet the NRC's requests. For instance, the type of evaluation that will be conducted will depend in part upon the geographic location of each site. Six categories of sites were identified: complex sites (with two flood hazards); sites located on rivers with upstream dams; sites located on rivers with no upstream dams; sites located on coastlines; sites located on lakes; and sites that are completely land-bound. Furthermore, sites with a docketed Combined License (COL) were treated separately regardless of geographic location.

4) Seismic Walkdown:

The March 12, 2012 request for information requested two types of information relevant to the seismic walkdowns. First, within 120 days of the letter (July 10, 2012), each licensee was asked to submit a response to the NRC confirming that it intended to use industry-developed, NRC-endorsed seismic walkdown procedures or provide an plant-specific walkdown procedures. The NRC endorsed the industry seismic walkdown guidance on May 31, 2012, and the industry is in the process of developing submittals to meet the July 10 deadline. In addition, the NRC requested that, within 180 days of the NRC's endorsement of walkdown procedures, or November 27, 2012, each licensee completes the seismic walkdown, and submits a final report to the NRC on its findings.

Industry estimates that these seismic walkdowns and associated activities (e.g. preparation of the 120 day responses, training of site personnel, preparation of the final report, and preparation of the submittal documentation) will require an average of 2,000 hours per site to complete, which is consistent with the NRC's burden estimates for this information request.

5) Flooding Walkdown:

The March 12, 2012 request for information requested two types of information with respect to licensee flooding walkdowns. First, within 90 days of the letter (June 10, 2012), each licensee was asked to submit a response to the NRC confirming that it intended to use industry-developed, NRC-endorsed flooding walkdown procedures or provide an plant-specific walkdown procedures. The NRC endorsed the industry walkdown guidance on May 31, 2012, and all licensees have submitted responses confirming use of the NRC guidance. Second, within 180 days of the NRC's endorsement of walkdown procedures, or November 27, 2012, each licensee is required to complete the walkdown, and submit a final report to the NRC on its findings.

Industry estimates that these walkdowns will require an average of 3,904 hours per licensee to complete, with a low estimate of 3,318 hours, and a high estimate of 4,489 hours. In contrast, the NRC estimates that it will take approximately 2,000 hours for each licensee to respond to the NRC's information request with respect to conducting site walkdowns to inspect flooding preparedness.

These burden estimates were developed by the same industry task force that developed estimates for flooding hazard reevaluations described above. It should also be noted that development of a response for the flooding walkdown information requests requires more than simply conducting the walkdowns themselves. Licensees must develop guidance and training, and complete and document training. Each site must be prepped for the walkdown, which includes such activities as opening and resealing cable chases manhole covers, and building scaffolding. Finally, once the walkdowns are complete, licensees must review the results of the walkdown, and prepare responses for the NRC. The table below provides specific, detailed estimates for all of these steps.

Flooding Walkdowns

Flood walkdown scope activities	Number of personnel assigned	Number of weeks for the task	Number of hours per week	Man hours totals	Man hours totals - 15 %	Man hours totals +15%	Calendar Days
Station - Develop Guidance and Training	2	6.0	40	480	408	552	42.0
Station - Review of BD / Develop Scope	2	6.0	40	480	408	552	42.0
Station - Build Scaffold (assume 10)	4	2.0	40	320	272	368	
Station Open/reseal Cable chase Manhole covers (assume 20)	2	4.0	40	320	272	368	
Station - Complete and Document Required Training	5	1.0	40	200	170	230	7.0
Station Perform Walkdown	4	8.0	40	1280	1088	1472	56.0
Station - Results Review and Disposition	2	8.0	40	640	544	736	56.0
Station - Prepare and Approve Response	2	8.0	40	640	544	736	56.0
							total days
							259.0
							man/years
Total estimated resources for a 2 unit site (the units are identical)				4360	3706	5014	2.1
Total estimated resources for a single unit site would be 70% of the effort of a 2 unit site				3052	2594	3510	1.5
Total estimated resources for a 3 unit site would be 130% of the effort of a 2 unit site				5668	4818	6518	2.7
Total estimated resources for a 2 unit site (the units are significantly different from each other). 2 times single unit site				6104	5188	7020	2.9
Number of single unit sites: 28 Number of 2 unit sites: 31 Number of significantly different 2 unit sites: 2 Number of 3 unit sites: 3							
				Avg	**Low**	**High**	
Industry average flood walkdown effort per site				**3904**	**3318**	**4489**	

6) Emergency Preparedness Communications and Staffing Analysis

The March 12, 2012 emergency preparedness-related requests for information were broken into two areas: communications and staffing. Within these two areas, information requests were further subdivided into detailed information requests relevant to those areas, and identified by numbered paragraphs (e.g. Communications 1, or Staffing 5). In addition, the information requests specified various time frames for submittal of information responsive to these requests, ranging from 60 to 90 days from the date of the letter. In addition, the March 12th letter also provided that licensees could propose an "alternative course of action" to the NRC within 60 days of the letter, or May 11th.

Consistent with that alternative course of action provision, the industry developed an industry-wide alternative course of action. Development of an alternative course of action was necessary for two primary reasons. First, the entire nuclear power industry is currently implementing emergency plan changes required by the NRC's recently-finalized Emergency Preparedness rule. In the Staff Requirements Memorandum for SECY-12-0025, the Commission specifically acknowledged that implementation of the Emergency Preparedness rule was a higher priority than responses to the information requests, and the NRC staff has likewise recognized this. Second, a number of the emergency preparedness-related information requests are directly tied to licensee implementation of NRC Order EA-12-049, which requires implementation of mitigation strategies to cope with beyond-design-basis external events. The NRC is not expected to issue implementing guidance for EA-12-049 until August 2012, and licensee overall integrated plans are not required to be submitted to the NRC until February 2013. Because licensees could not do the analysis necessary with respect to certain staffing and communication requests, it was therefore not feasible to provide responses within the deadlines specified in the March 12th letter.

Accordingly, by May 11, 2012, all licensees subject to the information request had submitted responses to the NRC requesting approval of an alternative course of action that primarily proposed alternative and staggered due dates for the submittal of emergency preparedness-related information, and the NRC has since approved those proposals. The alternative course of action establishes that substantive responses be submitted to the NRC in several parts. The first responses related to emergency response organization notification, site access, and interim actions would be submitted within 90 days of the 50.54(f) letter, or June 10, 2012, and all licensees have since met this deadline. A second and final communications-related response will be provided in October 2012. The remaining requests associated with staffing assessments would be submitted in two phases with the first phase including information that was not directly related to licensee implementation of NRC Order EA-12-049, and the second phase information that is directly related to implementation of EA-12-049. Due dates for final submittals vary by licensee and are generally dependent on site-specific outage schedules.

Industry Resource Estimates

In total, industry estimates that responding to the emergency preparedness-related information requests will require an average of 498 hours per single unit site, and 636 hours per multi-unit site. In contrast, the NRC has significantly underestimated the burdens imposed by these emergency preparedness-related requests. The NRC estimated that the communications analysis would only require approximately 50 hours, and the staffing analysis would only require a total of approximately 50 hours. The NRC's burden estimates did not appear to account for the variation in response times between single and multi-unit sites, nor the burdens associated with the breakdown of responses into separate phases.

Industry estimates described below have been broken into five discrete areas to better clarify how these estimates were obtained. These areas include the burden associated with: (1) development of an alternative course of action; (2) development and submittal of responses to

Communications request 2 and Staffing requests 3, 4, and 5; (3) development and submittal of responses to Communications requests 1 and 3; (4) development, preparation, review and submittal of responses to Staffing requests 1, 2, and 6 (Phase 1); and (5) development, preparation, review and submittal of responses to Staffing requests 1, 2, and 6 (Phase 2). These burden estimates were developed by an industry task force that was established specifically for purposes of responding to the NRC's requests for information specific to emergency preparedness. Members of the task force were chosen for their expertise in emergency preparedness staffing and communication.

Alternative Course of Action Development

As noted above, industry had developed an alternative course of action to that proposed in the March 12 request for information. **On average, development and submission of the alternative course of action required approximately 40 hours per site, regardless of whether the site was a single unit or multi-unit**. The basis for development the alternative course of action was explained above.

Development and submittal of responses to Communications request 2 and Staffing requests 3, 4, and 5

Communications request 2 requires licensees to describe interim actions to enhance existing communications systems power supplies during development of the assessment of their communications capabilities. Staffing requests 3, 4, and 5 require submittal of information related to notification of augmented staff, identification of site access routes, and interim actions to be taken during completion of the staffing assessment respectively. In accord with the alternative course of action submitted by licensees, all sites submitted responses to these request by June 11, 2012. **Completion of these portions of the information requests took, on average, 120 hours per site regardless of whether the site was single or multi-unit**.

Development and submittal of responses to Communications requests 1 and 3

Communications request 1 requires completion and submittal of an assessment of the current emergency communications capability at the site, identification of any enhancements that could be made to maintain communications during a large scale natural event in which all alternating current (AC) power to the site has been lost. Communication request 3 requires submittal of an implementation schedule for those identified enhancements. In accord with the alternative course of action approved by the NRC, licensees will submit responses to Communications requests 1 and 3 no later than October 31, 2012. **Completion of these portions of the information requests is estimated to take approximately 200 hours per site, regardless of whether the site is single or multi-unit**.

Development and submittal of responses to Staffing requests 1, 2, and 6 (Phase 1)

Staffing requests 1, 2, and 6 generally relate to licensee development of assessments of onsite and augmented staff needed to respond to a large-scale natural event resulting in a total loss

of AC power to the site. This includes development of a proposed implementation schedule and identification of possible changes to site emergency plans. Site emergency plans are part of each license as required by 10 C.F.R. § 50.54(q), and changes to such plans potentially require a license amendment. As noted above, licensees will provide responses to Staffing request 1, 2, and 6 in two phases. Responses submitted as part of Phase 1 include information that is not related to implementation of EA-12-049. **Phase 1 staffing submittals will require approximately 138 hours for each multi-unit site**. Phase 1 staffing information requests are not applicable for single unit sites.

Development and submittal of responses to Staffing requests 1, 2, and 6 (Phase 2)

Phase 2 submittals to Staffing requests 1, 2, and 6 include information that is directly related to implementation of NRC Order EA-12-049, and therefore cannot be developed until after licensees develop implementation plans to comply with that order. Unlike Phase 1, Phase 1 responses must be submitted by both single and multi-unit sites. **Industry estimates that development and submittal of these responses will require approximately 138 hours per site for both single and multi-unit sites.**

Summary of Emergency Preparedness Burden Estimates

Response	Single Unit (Hours)	Multi-Unit (Hours)
1) Alternative Course of Action Development	40	40
2) Responses to Communications 2 and Staffing 3, 4, and 5	120	120
3) Responses to Communications 1 and 3	200	200
4) Responses to Staffing 1, 2 and 6 (Phase 1)	0	138
5) Responses to Staffing 1, 2, and 6 (Phase 2)	138	138
TOTAL	**498**	**636**