

## NON-CONCURRENCE PROCESS COVER PAGE

The U.S. Nuclear Regulatory Commission (NRC) strives to establish and maintain an environment that encourages all employees to promptly raise concerns and differing views without fear of reprisal and to promote methods for raising concerns that will enhance a strong safety culture and support the agency's mission.

Employees are expected to discuss their views and concerns with their immediate supervisors on a regular, ongoing basis. If informal discussions do not resolve concerns, employees have various mechanisms for expressing and having their concerns and differing views heard and considered by management.

Management Directive, MD 10.158, "NRC Non-Concurrence Process," describes the Non-Concurrence Process (NCP), <http://nrcweb.nrc.gov:8600/policy/directives/catalog/md10.158.pdf>.

The NCP allows employees to document their differing views and concerns early in the decision-making process, have them responded to (if requested), and attach them to proposed documents moving through the management approval chain to support the decision-making process.

NRC Form 757, "Non-Concurrence Process" is used to document the process.

Section A of the form includes the personal opinions, views, and concerns of a non-concurring NRC employee.

Section B of the form includes the personal opinions and views of the non-concurring employee's immediate supervisor.

Section C of the form includes the agency's evaluation of the concerns and the agency's final position and outcome.

NOTE: Content in Sections A and B reflects personal opinions and views and does not represent official factual representation of the issues, nor official rationale for the agency decision. Section C includes the agency's official position on the facts, issues, and rationale for the final decision.

At the end of the process, the non-concurring employee(s):

- ☐ Concurred
- ☒ Continued to non-concur
- ☐ Agreed with some of the changes to the subject document, but continued to non-concur
- ☐ Requested that the process be discontinued
  
- ☐ The non-concurring employee(s) requested that the record be non-public.
- ☒ The non-concurring employee(s) requested that the record be public.
  
- ☐ This record is non-public and for official use only.
- ☒ This record has been reviewed and approved for public dissemination.



NON-CONCURRENCE PROCESS

NCP-2016-021  
11/23/16 NCP PM

SECTION A - TO BE COMPLETED BY NON-CONCURRING EMPLOYEE

TITLE OF SUBJECT DOCUMENT

IPs 71111.17T and 71111.21M

ML16147A416  
ML16238A320

ADAMS ACCESSION NO.

~~XX~~

DOCUMENT SIGNER

Christopher Regan

Juan Peralta

SIGNER TELEPHONE NO.

(301) 415-2768

TITLE

Branch Chief, Engineering Inspections Branch

ORGANIZATION

NRR/DIRS

NAME OF NON-CONCURRING EMPLOYEE(S)

Robert Daley

TELEPHONE NUMBER

(630) 829-9749

TITLE

Engineering Branch Chief

ORGANIZATION

RHH/DRS

☐

DOCUMENT AUTHOR

☐

DOCUMENT CONTRIBUTOR

☒

DOCUMENT REVIEWER

☒

ON CONCURRENCE

NON-CONCURRING EMPLOYEE'S SUPERVISOR

Mohammed Shuaibi

TITLE

Deputy Division Director, DRS

ORGANIZATION

RHH/DRS

☐

I WOULD LIKE MY NON-CONCURRENCE CONSIDERED AND WOULD LIKE A WRITTEN EVALUATION IN SECTION B AND C.

☒

I WOULD LIKE MY NON-CONCURRENCE CONSIDERED, BUT A WRITTEN EVALUATION IN SECTIONS B AND C IS NOT NECESSARY.

WHEN THE PROCESS IS COMPLETE, I WOULD LIKE THE NCP FORM:

☒

PUBLIC

☐

NON-PUBLIC

REASONS FOR THE NON-CONCURRENCE, POTENTIAL IMPACT ON MISSION, AND THE PROPOSED ALTERNATIVES

(use continuation pages or attach Word document)

This non-concurrence is being written to express overall disagreement with the approach that NRR has taken to proposed changes to the engineering inspection program. It is the belief of the non-concurring individual that these changes being made by the agency take a number of steps backward and do little to move the agency and stakeholders forward into the future. The position put forward in this non-concurrence, as stated in the attachment to this document, is as follows:

The proposed changes to the engineering inspection program involving a two onsite week CDBI, a two onsite week programmatic CDBI style inspection (presently inspecting EQ), and a one onsite week screening and 50.59 based inspection reduces the overall efficiency and effectiveness of the inspection program and ignores the concerns of both the NRC and the industry regarding effective use of agency and industry resources.

SIGNATURE

*[Signature]*

DATE

11/22/16



## Attachment A: Basis for NCP-2016-XXX

### Background

Proceeding into a new triennial cycle, the agency (with noted resistance from both staff and supervision in Region III) has proposed to change the manner in which the engineering team inspections have been conducted. Prior to these proposed changes, inspection has consisted of a Component Design Basis Inspection (CDBI) with three weeks onsite inspection and a Modifications and Changes, Tests, and Experiments (Mod/50.59) inspection lasting two weeks onsite.

Because of the repetitive nature of the CDBI and the perceived concentration of the CDBI on legacy design and license basis issues, a pilot program was developed to attempt a new approach. The pilot program reduced the CDBI to a two week onsite inspection, and it developed a one week onsite programmatic inspection which concentrated on certain engineering programs. The pilot program concentrated on the Equipment Qualification (EQ) inspection. After performing two of each of these inspections in each region, branch chiefs from the regions and a staff member from the NRR inspection branch assembled and decided that the inspection program should again change and proposed a new approach. It should be noted that two of the four regions preferred staying with the pilot approach, at least until more sweeping changes could be put into place.

Logistically, the new approach did not change the two week CDBI inspection, but it did add an additional onsite week to the CDBI/EQ inspection. The CDBI was renamed as the Design Basis Assurance (DBA) inspection and the CDBI/EQ inspection was renamed as the DBA (Programs) inspections (it will be referred to as the DBA-Program inspection in this paper). To make up for this additional onsite inspection, the new approach cut in half the Mod/50.59 inspection, leaving it as a one week onsite inspection, and removed the modifications portion of the inspection, inserting it into the classical CDBI inspection.

The position of this non-concurrence is the following:

### ***Position***

***The proposed changes to the engineering inspection program involving a two onsite week CDBI, a two onsite week programmatic CDBI style inspection (presently inspecting EQ), and a one onsite week screening and 50.59 based inspection reduces the overall efficiency and effectiveness of the inspection program and ignores the concerns of both the NRC and the industry regarding effective use of agency and industry resources.***

It should be noted that this paper primarily discusses two stakeholders, the NRC and the industry. This is because the stakeholders primarily involved in the engineering inspection program and changes to the program are the NRC and the industry. It is not meant to diminish the importance of other stakeholders. Also, it is expected that most opinions of stakeholders will be suitably represented if an inspection program is developed that is efficient, effective, and focused on safety.

To properly address the different aspects of the new inspection procedures being proposed and the contrary position to these changes given above, this paper is organized into five sections. The first four sections establish positions that are used to support the overall position of the paper which was provided above. The last section provides a summary of recommendations, based upon the discussions in the first four sections, for moving forward with the engineering team inspections. The five sections are as follows:

- Section 1: Logistically and administratively, the new approach being pursued for engineering team inspections decreases the efficiency and effectiveness of the inspection program for both the agency and the industry.
- Section 2: The proposed changes significantly reduce the effectiveness of the inspection attributes that are presently a part of the Mod/50.59 inspection.
- Section 3: The Mod/50.59 inspection, as presently designed, is an extremely important inspection that is a better measure of the overall performance of the current licensees' engineering organizations than the other inspections performed.
- Section 4: Development of a long term, comprehensive solution, for increasing the efficiency and effectiveness of the engineering inspection program should be implemented instead of the new proposal. This should include the involvement of both the NRC staff and the industry.
- Section 5: Recommendations



**Section 1: Logistically and administratively, the new approach being pursued for engineering team inspections decreases the efficiency and effectiveness of the inspection program for both the agency and the industry.**

#### Discussion

**Section 1a: The proposed changes realign resources in a manner that increases inspector resources and will ultimately increase the number of resources expended by the industry.**

A breakdown of the resources associated with the old inspection and the new proposed approach are shown below. This summarization was compiled by one of the Branch Chiefs responsible for the CDBI inspections.

# Component Design Bases Inspection (CDBI) Inspections – October 2016

## Original

Inspection	Sample Requirements	Inspector Makeup	Direct Inspection Effort	Time On-Site	Overall Inspection Footprint*	Additional Admin Burden on Licensee**	Overall Burden on Licensee***	Inspector Budget*	Billed Time*
CDBI (IP 71111.21)	<u>15 – 25 Total</u> 11 – 16 Components 01 – 03 LERF Comps 03 – 06 OpE	4 Inspectors 2 Contractors	408 hrs	3 Weeks	7 Weeks	5 Weeks	12 Weeks	28 personweeks	42 personweeks
Mod/50.59 (IP 71111.17T)	<u>23 – 52 Total</u> 06 – 12 Evaluations 12 – 25 Screenings 05 – 15 Modifications	3 Inspectors	192 hrs	2 Weeks	5 Weeks	3 Weeks	8 Weeks	15 personweeks	15 personweeks
		Total	600 hrs	5 Weeks	12 Weeks	8 Weeks	20 Weeks	43 Weeks	57 Weeks

## Proposed Changes

Inspection	Sample Requirements	Inspector Makeup	Time On-Site	Overall Footprint*	Additional Admin Burden on Licensee**	Overall Burden on Licensee***	Inspector Budget*	Billed Time*
DBA – Team (IP 71111.21M)	<u>08 – 12 Total</u> 04 – 06 Modifications 04 – 06 Components 01 – 03 OpE 01 LERF Component	4 Inspectors 2 Contractors	2 Weeks (1 wk bagman)	5 Weeks	4 Weeks	9 Weeks	20 personweeks	30 personweeks
DBA – Prog (IP 71111.21N)	06 – 10 Components related to the identified program (i.e., EQ)	3 Inspectors	2 Weeks	5 Weeks	3 Weeks	8 Weeks	15 personweeks	15 personweeks
50.59 (IP 71111.17T)	<u>18 – 37 Total</u> 06 – 12 Evaluations 12 – 25 Screenings	3 Inspectors	1 Week	3 Weeks	3 Weeks	6 Weeks	9 personweeks	9 personweeks
		Total	600 hrs	13 Weeks	10 Weeks	23 Weeks	44 Weeks	54 Weeks
		Delta	-	+ 1 Week	+ 2 Weeks	+ 3 Weeks	+ 1 Week	- 3 Weeks

\* Footprint, inspector budget, and billed time takes into consideration allocated prep and doc time associated with the inspection (i.e., the time that inspectors and contractors are working on the inspection and will be billed to the licensees).

\*\* Additional admin burden that the licensee incur may include additional time to support the bagman trip, performing self-assessments, etc.

\*\*\*Overall Burden on Licensee includes the inspection footprint and the additional admin burden (i.e., how many weeks does this activity take their staff away from otherwise productive work).



Again, it should be noted that the table above was not the product of the author of this paper, but instead was another Branch Chief.

Left out from this compilation was the pilot program conducted during the 2016 calendar year. This would look as follows:

Inspection	Sample Requirements	Time On-Site (Overall Footprint)	Inspector Makeup	Inspector Budget*	Billed Time*
DBA – Team (IP 71111.21M)	<u>08 – 12 Total</u> 04 – 06 Modifications 04 – 06 Components 01 – 03 OpE 01 LERF Component	3 Weeks (5 Weeks)	4 Inspectors 2 Contractors	20 person- weeks	30 person- weeks
DBA – Prog (IP 71111.21N)		1 Week (3 Weeks)	3 Inspectors	9 person- weeks	9 person- weeks
Mod/50.59 (IP 71111.17T)	<u>23 – 52 Total</u> 06 – 12 Evaluations 12 – 25 Screenings 05 – 15 Modifications	2 Weeks (5 Weeks)	3 Inspectors	15 person- weeks	15 person- weeks
Total				44 person- weeks	54 person- weeks

The overall inspection burden would probably be similar between the CDBI pilot program conducted in 2016 and the new approach being proposed. As can be seen from the tables above, the pilot program and the new approach are similar in resources with a sizeable shift being placed on the DBA-Program inspection.

For the new approach, the decrease in agency resources from the original CDBI is the reduction from the contractor resource pool that was required with a third week of contractor onsite inspection (as opposed to a bagman trip). The increase in total inspection resources logistically with the new approach is one week. The overall reduction in billable weeks from the original inspection is 3 weeks out of 57, or a reduction of 5%, which is relatively insignificant, as is the increase in inspector time, 1 week out of an original 44 weeks, or 2% increase. The increase in industry resources, according to the first table, is NOT insignificant, with an additional 6 weeks from an original 30 weeks, amounting to a 20% increase.

Additionally, based upon the new approach, it can be argued that the increase in preparation time necessary to now prepare effectively for the Mod/50.59 inspection and to resolve issues when inadequate time is available during onsite time will easily negate any small, statistically insignificant, gains in billable hours that could be achieved through such a change. This will also add to overall inspector effort and time. This aspect of the changes will be further discussed in another section.

Based upon this, it is unclear how these proposed changes address any of the industry concerns in regard to the unnecessary use of industry resources and regulatory footprint. Additionally, the overall impact to inspection resources would increase as well. As noted below, from the same paper that contained the aforementioned resource comparisons, the overall effect would be an increased impact to both the agency and the industry.

#### Potential Impact of the Proposed Changes

When evaluating the changes to the feedback received by the stakeholders, several different impacts were identified. Three impacts are outlined below:

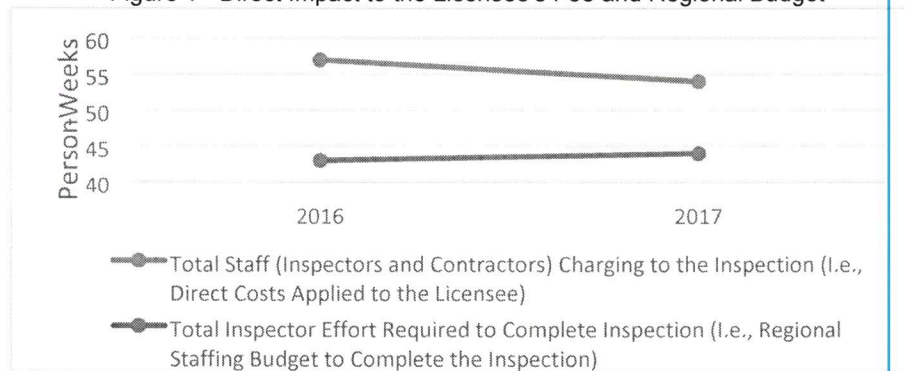
##### *Impact to Direct Costs (i.e., fees) Assessed to Licensees*

- As a result of the reduced overall footprint (i.e., reducing total man-weeks from 57 to 54 man-weeks, see Table 1), the direct costs associated with **fees assessed to the licensees is expected to be reduced.**

##### *Impact to Inspection Budget to the Regional Offices*

- Though the overall footprint is expected to be reduced by removing two-weeks of contractor support, the **impact to the regional staffing budget is expected to increase by approximately 0.2 FTE.** This increase in staffing requirements is exasperated by the reduction in total FTE as imposed by Project AIM (i.e., fewer inspectors will be required to perform more work than is currently being performed).

Figure 1 - Direct Impact to the Licensee's Fee and Regional Budget



##### *Impact to In-Direct Costs (i.e., administrative burdens) applied to the Licensees*

- The proposed changes add an additional inspection or “touch-point” to the licensees. As a result, the licensees have to account for additional prep time for the added inspection. This includes additional self-assessments, additional contractor support, additional administrative support, additional time the licensee allocates resources away from productivity to address inspection activities, etc. This was communicated as a result of the pilot inspections and expressed again during the September Public Meeting. However, it is expected that the proposed changes would **increase the in-direct costs incurred by the licensee.**



In conclusion, the changes being made do relatively little to increase agency efficiency and reduce regulatory burden to the licensee, and in totality, would actually appear to increase overall regulatory footprint and burden to the licensees.

**Section 1b: Pursuing the new proposed approach is ineffective as both a short term and long term option.**

As discussed in the previous section, if adopted as a long term proposal, logistically and administratively, the changes do not effectively reduce the burden on either the agency or the industry.

The argument posed by some is that this need not be a long term solution, but can be a short term solution to bridge the gap until a more sweeping reform of the inspections can be accomplished. A counterpoint to this argument would be that a set of new procedures that usher in a new way of conducting inspection for a short term is not an effective approach to bridging a gap to a long term resolution. Any new methodology for inspecting that affects the whole range of engineering team inspections will more likely adversely affect inspection effectiveness during the short term, while inspectors and the regions inevitably adapt, check, and adjust to the new methodology and logistics. This will be doubly true for the industry and their response to the new inspection regiment. Then, changing to another long term inspection program will again cause more unnecessary adaptations by both the agency and the industry.

A better option moving forward would be to continue one of the already established inspection options - the old CDBI and Mod/50.59 inspections or the pilot program established in 2016 – and use that program to bridge the gap until a new, more broad-ranging, improvement to the engineering team inspections could be established. This type of more sweeping reform to the engineering inspections could be done in union with industry proposals and could be done with a progressive deadline date for completion (such as the end of CY 2017). This aspect will be further discussed in another section of the document.

**Section 2: The proposed changes significantly reduce the effectiveness of the inspection attributes that are presently a part of the Mod/50.59 inspection.**

The proposed changes to the engineering team inspections cuts the Mod/50.59 inspection by 50%. The intent of the new realignment is to move the lost Mod/50.59 hours into the DBA-Program inspection, and move the Modification samples into the DBA-CDBI.

The basis for increasing the hours associated with the DBA-Program inspection is to make the inspection more effective. This is accomplished by increasing the hours and by changing the

inspection from a one week onsite inspection to a two week onsite inspection. The basis for changing to a two week inspection was outlined in a one pager from NRR to Bill Dean that stated, "This increase in the number of onsite weeks for the EQ program inspection was because additional time was needed onsite to be able to understand the complex and customized EQ program at each site." The problems associated with the DBA-Program EQ inspection is evidenced by the number of findings associated with the inspection during the pilot phase. For eight total inspections, the cumulative total of findings was only 6 findings, or less than one finding per inspection. If the St. Lucie inspection, which resulted in 4 findings, was thrown out of the mix, the DBA-Program (EQ) inspection produced a total of 2 findings in 7 inspections, or 0.3 findings per inspection. As a first impression based upon the pilot, it would be safe to conclude that the EQ inspection produced minimal results from an NRC perspective.

Contrary to the NRR one pager provided to Bill Dean, there is no correlation (that I am aware of) between the inspector's understanding of plant specific customized programs and the number of findings. Understanding the program certainly helps in efficiently reviewing the applicable documentation, but the large majority of findings are written on regulations, Technical Specifications, license conditions, etc., and the programmatic aspects are factors that are considered in either the "more than minor" determination or the cross-cutting aspects.

However, there is a correlation in inspection efficiency and effectiveness between the results of a one week long engineering team inspection and a two week long engineering team inspection. This occurred in Region III during the latter half of 2005 and the first part of 2006. Prior to this period, the Region III Mod/50.59 was a four inspector, one week inspection. In late 2005, the logistics of the inspection was changed such that the inspection was held over two onsite weeks with two inspectors. Logistically, the inspection hours were unchanged, but the time period for the inspectors to research and delve into the samples was doubled. The results were not only supportive of the change, but they proved fairly conclusively that a two week inspection was clearly more effective than a one week inspection. The results were as follows:

- In the prior 16 one week long, four person inspections, there was a total of only 3 findings.
- In the first 7 two week long Mod/50.59 inspections, the teams produced 14 findings.

The number of findings in region III throughout each calendar year (a total of five inspections) normally averages between 5 and 10 findings. The results of the Region III Mod/50.59 inspection has been proven to be fairly consistent with the number of findings on the CDBI when the extra hours allocated to the CDBI is taken into account along with the additional resources of two engineering contractors.

While the rationale for expanding the DBA-Program inspection to two weeks in the one pager to Bill Dean appears to be flawed, there is a sound rationale to increase the inspection to a two week inspection, and the rationale is similar to that for the 2005 change from a one week to a two week inspection for the Mod/50.59 inspection. A two week inspection allows for a more in-depth review of samples. A one week inspection is too short to perform a meaningful



inspection. This is especially true for plants that require more travel time. The first and last day are spent primarily traveling and Thursday afternoon is normally spent trying to wrap things up and performing the technical debrief. That leaves two and a half days to perform quality inspection, which allows for little follow-up time on any issues.

The same reasons why the new proposal expands the DBA-Program EQ inspection to two weeks is the same reason to not limit the Mod/50.59 inspection to one week. The advantages of a two week Mod/50.59 inspection are as follows:

- Allows for a more in-depth review of samples;
- Allows for more time to branch into, and review, ancillary documents affected by the reviewed change;
- Findings and observations are more meaningful, because the inspection team has more time to understand the issues and process breakdowns and/or human errors involved;
- The licensee has more time to develop responses to inspector questions;
- A higher percentage of issues are resolved prior to the exit. A one week inspection leads to issues being further inspected after the exit or turned into URIs, or the issue is just dropped before a finding can be adequately developed.

The second part of the new proposed inspections is the removal of the modifications sample from the Mod/50.59 inspection and transferring it to the DBA-CDBI inspection.

The new inspection proposals are also not in line with the many complaints that the industry has expressed. The primary concern that the licensees have expressed concerns the CDBI. The new proposed inspections change the name to Design Basis Assurance inspections; however, the fundamental principles and framework of both DBA inspections are still really the same, with the DBA-Program inspection performing a review of programs that have not been looked at in any meaningful way since the ROP began. Regardless, both inspections primarily look at long-standing design issues. This has been the primary complaint expressed by the industry over the last decade. As recently as October 19, 2016, the National Association of Regional Utility Groups (NRUG) stated the following in a letter to the NRC:

“ . . . the NRUG has followed the NRC’s 2015-2016 pilot test of the revised CDBI that retains the existing inspection but reduces its scope and duration. Based on our review of this experience, the NRUG recommends that the CDBI and tri-HSPI be dropped from the baseline inspection program . . . The CDBI and HSPI both deal with inspecting the design bases of systems, structures, and components (SSCs) that have not significantly changed since plant construction.”

Neither the present CDBI format, nor the pilot program, nor the new inspection proposal resolves any of these issues. Dismantling the Mod/50.59 inspection and throwing the modifications into the CDBI procedure to make it more relevant doesn’t solve the inherent

problems with the CDBI either. It just shuffles the deck, and it shuffles it in a way that will do damage to the samples in the combined Mod/50.59 inspection.

Moving the modifications to an inspection that is primarily based upon design bases samples will diminish the importance of the modifications samples. The samples will be performed, but they will inevitably take a back seat to the bigger, and better established, design basis inspection. This was attempted in region III a decade ago and that is exactly what happened. Finding performance deficiencies involved in modifications is more difficult, because the modifications process is much more complex to understand, and most of the findings are contained within the ancillary documents that are, or can be, affected by the modification. The easier path to a finding is to look at components and their supporting design basis documents, which are pretty much the same and most inspectors are familiar with. Unfortunately, this will inevitably take the focus off of the modifications, and findings associated with modifications are clearly more valuable, because it gives an insight into how the licensee's engineering organization is doing now as opposed to 20 or 30 years ago. In fact, even though the new inspection proposal moves modifications into the DBA inspection, the procedure sample is a "total of four to six modifications to Mitigation SSCs." There is no requirement to pick recent modification samples. This moves the modification sample even further from a present day evaluation of the engineering organization and pushes it into the old design/license bases and legacy issue review which is what we as an agency should be moving away from. There is some benefit and room for these types of reviews, but it should be a much smaller part of the inspection baseline instead of an ever growing area of expansion of the regulatory inspection footprint.

Finally, leaving only the screenings and the 50.59 samples in the one week inspection negates the natural synergy between the modification and the screening processes. In most cases, the two are performed hand-in-hand. A screening that is performed for a major modification cannot be reviewed properly without also reviewing the modification. Because of the limited duration of the inspection – one week under the new proposal – these type of changes will either go unreviewed or they will be reviewed in lesser time ultimately resulting in inspections of lesser quality. In past inspections, time was allotted to review screenings of major modifications because enough time existed to do so. If the review of the modification took the majority of time, then the modification would count as the sample instead of the screen, or both could count, if it made sense to do so. This will no longer be the case, and the new screen and 50.59 inspection, due to limited time, will have trouble ever truly inspecting the ancillary documents affected by the changes, leading to an inspection of diminished quality.

**Section 3: The Mod/50.59 inspection, as presently designed, is an extremely important inspection that is a better measure of the overall performance of the current licensees' engineering organizations than the other inspections performed.**



While it is clear that the Mod/50.59 inspection gets less emphasis from the agency than the CDBI or the Fire Protection Inspection (FPI), the Mod/50.59 inspection should really be the inspection that garners the most focus. It is the only engineering inspection that completely focusses on the work that the licensee engineering organization performs now. The sole focus of the inspection is to look at the work products of the engineering organization over the last three years. This is unique, since the old CDBI, the new proposed DBA inspection, the new proposed DBA-Program inspection, and the FPI all focus on design and programs in the aggregate, resulting in the vast majority of the inspection being focused on older license and design bases elements as well as legacy issues. In fact, as stated in the prior section, even though the new inspection proposal moves modifications into the DBA inspection, the procedure sample is a “total of four to six modifications to Mitigation SSCs.” There is no requirement to pick recent modification samples.

The screening and 50.59 process is an extremely important one for the industry. The primary question in the screen asks if a change is being made to the facility as described in the UFSAR. For a change to the UFSAR defined facility to actually be made, the proposed change would, based upon supporting engineering and technical information, have “adverse” effects on Structures, Systems, and Components design functions. Such a change requires evaluation under 10 CFR 50.59. For the vast majority of facility changes, including modifications, the screen determines that a full 50.59 evaluation does NOT need to be performed.

There appears to be a misconception in the agency that the sole achievement of the 10 CFR 50.59 rule is to determine whether an NRC review is required for the change. While this is a part of the rule, the much larger benefit of the 50.59 rule is written into the questions asked during a 50.59 evaluation. The questions primarily revolve around whether the evaluated change results in more than a minimal increase in the **probability and consequences** of accidents or malfunctions of equipment **important to safety**, as well as accidents and malfunctions of a different type/result. The words “probability and consequences” and “important to safety” are extremely significant. When performing these screens and evaluations in a nuclear plant (which I have performed over 100 during my industry career), the evaluator is not overly concerned with whether the change needs a license amendment and therefore NRC approval, rather the evaluator is concerned about the adverse nature of the change and whether the change, if a 50.59 evaluation is performed, affects the safety of the plant. In the evaluator’s eyes, the words “probability and consequences” and “important to safety” are synonymous with safety. The thought process ultimately determines how much work will be put into evaluating the change and whether a change will be attempted or not. In most cases, if an evaluator performing a screen determines that a change is adverse, more work will either be put into further evaluating the screen, or the change may be altered to ensure that it is not adverse. If the change does definitively qualify as adverse, the change is still desirable to do, and the licensee thinks that the change cannot be altered so that a 50.59 is unnecessary, it will go through the 50.59 evaluation process. The fact that so few 50.59 evaluations are performed at each plant – 1 or 2 a year - displays that the licensees, in general, are very careful in their decision process when performing changes. If a change does not pass a 50.59 evaluation, it is

as likely that a plant will not perform the “as is” change, as opposed to applying for a license amendment.

This shows that the screen and 50.59 processes are really ways for the licensee to determine whether the changes that they are making can be performed and are safe. For a licensee, it's one of the most important steps in proceeding forward with changes to the facility. As an agency, we have tended to categorize the entire process as a checklist for whether we receive a license amendment or not. With this type of mindset in place, there is little wonder that reducing the scope and duration of the inspection is just an afterthought.

This inspection is some of the most important work that an engineering inspector will do, if performed properly. This inspection, in its purest form, should be a determination of whether the engineering organization is performing regulatory sound and safe practices while they are changing the facility. Screening out changes that should have been screened into the 50.59 process, and incorrectly answering the questions in a 50.59 evaluation, gives insight into the licensee's ability to be able to ensure safety. While the 50.59 evaluation, in and of itself, does not make the final determination of safety, the screening and 50.59 process and evaluations performed provide a unique insight into the way that an engineering organization ensures safety at a plant.

The subsequent lessons learned from the SONGS event and two different OIG reports – “NRC Oversight of Licensee's Use of 10 CFR 50.59 Process to Replace SONGS' Steam Generators, dated 2014,” and “Audit of NRC's Oversight of 10 CFR 50.59, Changes, Tests, and Experiments, dated 2016” - have determined that our present day review of the 50.59 process has room for improvement. As stated in one of the Region III comments on the newly proposed draft 71111.17T procedure, “Separating the 50.59 inspection from the permanent plant modifications is contrary to the lessons learned from the SONGS tube degradation event. Specifically, one of the actions from the “Review of Lessons Learned from the San Onofre Steam Generator Tube Degradation Event” (ML15015A419) was to update the inspection procedures governing inspectors' performance of 10 CFR 50.59 inspection and other major plant modifications to appropriately focus inspection reviews. Separating these into two separate procedures that are performed one to two years apart does not appropriately focus inspection reviews; conversely, it diminishes the technical focus of the sample.” The comment was dismissed with the Remark, “Moving the modification samples from -.17T to the -.21M inspection procedure is not contrary to the recommendations made in the SONGS Lessons Learned report (ML15062A125).” Contrary to this dismissal, the individual who drafted the comment had a very legitimate concern about these new changes not meeting the agency's commitment to focus these type of inspection reviews and instead diminishing the future focus of the reviews.

Additionally, the OIG, in their 2016 report, states the following:



“Additionally, agency managers stated NEI 96-07, Revision 1 can be challenging for new inspectors to use because 10 CFR 50.59 is a very complex and nuanced area of expertise.”

With the recognition that 10 CFR 50.59 and the associated screening and 50.59 process are very complex and nuanced, it is hard to understand how reducing the inspection to a week (essentially three days of inspection) will do anything but diminish the inspection team’s ability to focus on “complex and nuanced” issues.

**Section 4: Development of a long term, comprehensive solution, for increasing the efficiency and effectiveness of the engineering inspection program should be implemented instead of the new proposal. This should include the involvement of both the NRC staff and the industry.**

Based upon the discussions in this paper, changing to the new proposed inspection program does little to address some of the problems associated with the engineering team inspections. The new proposals shuffle samples in a manner that will do more harm than help to the inspection program, and the changes do not address any of the concerns expressed from the industry. In fact, Section 1 of this paper shows that the changes will most likely increase the overall burden to the licensees.

A better approach to improving the inspection program would be to involve the people who know the inspections best, the staff. The staff has the best idea of the type of inspection that will or will not work and can give valuable insight into the complications that can cause the inspections to be less productive. This approach also provides buy-in from the staff as the program is finalized. This should be done at the initial stages of development so that the best product can be developed. From all accounts, this was not done for the new inspection proposal.

In fact, Region III had provided at least 20 comments associated with the new DBA and Changes, Tests, and Experiments procedures that largely reflect the positions in this paper. These comments were dismissed. It should be noted that none of these official comments were drafted by the author of this non-concurrence due to the desire to ensure that his opinions were not his alone. Reasons for dismissal of the comments ranged from “Industry prefers the options being proposed over the version of the pilot inspections” to “No changes to proposal occurred as a result of the 9/14/16 meeting” to “Performing the modifications correctly and satisfactorily complying to the requirements of 10 CFR 50.59 resides within the licensee’s organization’s area of responsibility. Therefore, it is not the NRC’s responsibility to prevent incorrectly performed 50.59 screenings, evaluations or modifications”. Of the three comments above, the third comment is largely a non sequitur that does not address actual inspection, and the second comment totally ignores the fact that a large number of inspectors throughout the regions and the vast majority of staff and engineering supervision in Region III has always been opposed to

the changes. The first comment is simply incorrect, since the more accurate statement would be that the industry is firmly opposed to all of the inspection options and believe that the newly proposed option does nothing substantial in regard to their concerns. Many of the Region III comments were dismissed by simply cutting and pasting from other comments and refusing to recognize the very real opposition to the proposed changes.

Additionally, our stakeholder, the nuclear industry, should also have input into the development of the program. A common concern of the industry is the amount of resources that they use to perform self-assessments. The common response from the agency has been that it is up to the industry whether they perform a self-assessment. Essentially, the licensees should be ready for an inspection with or without a self-assessment. This is a great sound bite, but it doesn't address the issue. The industry is going to perform self-assessments, and in reality, it is a good thing from a safety perspective that they do. The better question is this, "Is there some way that we can synergize our inspection program with the licensees' self-assessments?" If there is a way, then the final product would undoubtedly be a much better, and more widely accepted product. But, the only way to accomplish this is to allow the industry and other stakeholders to provide input into the development process. That has not been done, and based upon discussions with the industry, this type of approach would be clearly welcomed.

It is fairly clear that the new proposal for changes to the inspection program are not a good long term solution that addresses all of the various concerns. As a short term resolution, all that it does is add unnecessary perturbations, inefficiencies, and barriers to the inspection process. A better approach would be to leave the current inspection process in place (or the pilot program, as an alternative) until a more well thought out, comprehensive solution, including input from both the staff and the industry, can be developed. There is really no sound reason for making alterations to the program that do not resolve the many concerns and instead present additional uncertainties.

However, if a comprehensive, long-term, inclusive solution is decided upon, there should be a hard commitment to have the comprehensive overhaul in place in an accelerated fashion (the end of CY 2017 comes to mind). It is hard to believe that the industry would not be in alignment with this type of approach, because it allows them to ultimately save on resources. For the industry, this approach allows the following:

- The saving of resources in the short term. Changing inspection types and profile makes the industry change their preparation and self-assessments accordingly. This is an even greater resource allocation if a self-assessment has already been performed with the expectation that the inspection will remain the same. This is a very real possibility, since the new approach was developed so quickly at the very end of the triennial cycle. Additionally, changing again a year or two down the road to finally address the many problems in the program would only cause the same type of perturbation all over again.
- The possibility of permanently leaving behind inspection options that they are strongly against in the first place.



- The chance to provide direct input into a process that allows them to maximize their self-assessment efforts.
- The chance to work with the agency to develop a program that not only enhances safety from an agency perspective, but also increases the value added by inspecting areas that presently affect the nuclear industry, as opposed to emphasizing long-standing design and legacy issues.

Because of the overwhelming disagreement with the new proposals by both the staff and supervision in Region III, a half day working meeting was held between three staff members and two supervisors to discuss a better long-term approach to inspection. The team discussed changes to all engineering team inspections including the CDBI, Mod/50.59, the FPI, the Heat Sink inspection, and the PI&R inspection. The group came up with a solution that dramatically reduced the overall regulatory impact, while also keeping the most important aspects of the inspection program in place. It was largely ignored, maybe because it was such a large divergence from the norm. The proposal consisted of the following:

#### **Current**

<u>Inspection</u>	<u># Inspectors</u>	<u>"Footprint"</u>	<u>Total Impact</u>
CDBI	4	7	28
Mod/50.59	3	5	15
Heat Sink	2	3	6
FP / B.5.b	3	6	18
PI&R	4	5	20
Total			87

#### **Potential**

<u>Inspection</u>	<u># Inspectors</u>	<u>"Footprint"</u>	<u>Total Impact</u>
Engineering Team Insp	4	5	20
Engineering Program Insp	4	5	20
Eng Focus PI&R Insp	4	5	20
Operational PI&R	2	5	10
Total			70

In this proposal, the PI&R inspection would be broken up and turned into a more technically focused inspection performed by DRS and an operationally focused inspection performed more by DRP. The engineering team inspection would be a "blend" of the current CDBI, modification, 50.59, and other engineering change actions to become the engineering design inspection. The program inspection would allow more flexibility of the programs that are reviewed and would include:

- Fire Protection

- Ultimate Heat Sink
- B.5.b / FLEX
- Appendix J
- EQ / HELB
- Commercial Grade Dedication
- MOV/AOV – GL 89-10
- IST
- Gas Accumulation
- Etc.

The focus of the above program would primarily be on new engineering products and changes, the corrective action program, and programs that are not routinely looked at and that, for the most part can be changed “under the radar” through processes other than the screen and 50.59 processes. Of even more merit is the significant reduction in regulatory impact – **17 weeks**.

While this type of approach is a significant paradigm shift, and it may not be the end product when all stakeholders weigh in, it does show that it is not impossible to conceive of new, more comprehensive, and better ways to implement the program. It also shows the type of significant changes that can be achieved, and bought into, when the staff is actually included in the process.

Finally, when considering a future pathway for changes to the engineering team inspections, a number of factors should be considered. These factors have already been discussed in prior sections. These include, but are not limited to, the following:

- The reduced focus on long-standing and legacy design issues;
- The increased focus on new engineering changes which would be reflective of the present day performance of the engineering organization;
- The increased focus on safety significant areas that have not been routinely looked at in the past (programs, specific regulatory areas [SBO, etc], etc.);
- The increased focus on engineering corrective action documents and results.

It is recognized that broad and significant change will take some thought, hard work, and patient cooperation with agency stakeholders; however, it should result in a much more efficient, effective, and stable inspection program moving forward into the next decade.

## **Section 5: Recommendations**

The basis for the following recommendations are contained within the prior four sections of this document.



1. Do not implement the new proposal (Often referred to as Option 1) to change the engineering team inspections.
2. Commit to a long term overhaul of the current engineering team inspection program. The final product should be developed on an accelerated schedule.
3. Include the NRC staff in the development of the new long term inspection program.
4. Include industry input into the development of a new inspection program.
5. Attempt to coordinate/maximize the value of both the NRC inspections and the licensee self-assessments.

NRC FORM 757

NRC MD 10.158  
(11-2016)

U. S. NUCLEAR REGULATORY COMMISSION

NCP TRACKING NUMBER

## NON-CONCURRENCE PROCESS

NCP-2016-021

## SECTION B - TO BE COMPLETED BY NON-CONCURRING EMPLOYEE'S SUPERVISOR

TITLE OF SUBJECT DOCUMENT

IPs 71111.17T and 71111.21M ADAMS NOs. ML16147A416 and ML16238A320

ADAMS ACCESSION NO.

See Title

NAME

Mohammed Shuaibi

TITLE

Deputy Director

TELEPHONE NUMBER

(630) 829-9701

ORGANIZATION

Division of Reactor Safety, Region III

COMMENTS FOR THE NCP REVIEWER TO CONSIDER (use continuation pages or attach Word document)

As Bob's direct supervisor I have reviewed his non-concurrence. The points in the non-concurrence have been the subject of many discussions here in the region and I and many others on staff share the concerns outlined in the non-concurrence. I support the solution proposed to skip the interim fix in favor of a longer term and more comprehensive look at the engineering inspections as a whole and doing so in an expedient manner over the next year.

SIGNATURE

DATE

11/28/16



**NON-CONCURRENCE PROCESS**

NCP-2016-021

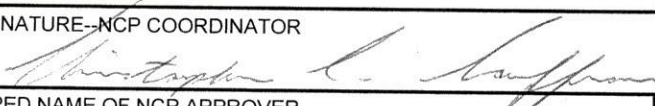
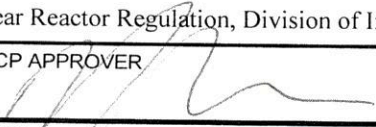
**SECTION C - TO BE COMPLETED BY NCP COORDINATOR**

TITLE OF SUBJECT DOCUMENT		ADAMS ACCESSION NO.
Inspection Procedures 71111.17T and 71111.21M (ML16147A416 & ML16238A320)		See Title
NAME		
Robert Daley		
TITLE		TELEPHONE NUMBER
Branch Chief		(630) 829-9749
ORGANIZATION		
Region III, Division of Reactor Safety, Engineering Inspections Branch		
AGREED UPON SUMMARY OF ISSUES (use continuation pages or attach Word document)		
See Section A		

EVALUATION OF NON-CONCURRENCE AND RATIONALE FOR DECISION (use continuation pages or attach Word document)

We share the submitter's commitment to enhance our current engineering inspections in an open and collaborative manner with the goal of improving inspection effectiveness. We are therefore aligned with all but the first of five recommendations made by the submitter. Next year we plan to reexamine our engineering inspections more broadly and take actions to develop an improved engineering inspection program as recommended by the submitter.

We agree with the submitter that (1) separating the review of 50.59 evaluations and screenings from modifications by relocating the modification review to Inspection Procedure (IP) 71111.21M, (2) reducing the required permanent plant modification reviews in IP 71111.21M, and (3) reducing the inspection resources for IP 71111.17T, (thereby shortening the time on site), has the potential to reduce the effectiveness of 50.59 evaluations, screenings, and modifications inspection activity. However, moving modification samples to the CDBI (Component Design Bases Inspection) has the benefit of focusing the CDBI on more current inspection issues and leveling inspection impacts over the triennial period; and, holistically considering the results of the CDBI pilot inspections, inspector feedback, and licensee performance historically and during the recent pilot inspections, we believe that reallocating

TYPED NAME OF NCP COORDINATOR	TITLE	
Christopher C. Cauffman	Reactor Operations Engineer	
ORGANIZATION		
Office of Nuclear Reactor Regulation, Division of Inspection & Regional Support, Reactor Inspection Branch (NRR/DIRS/IRIB)		
SIGNATURE--NCP COORDINATOR		DATE
		12/6/16
TYPED NAME OF NCP APPROVER	TITLE	
Michael F. King	Deputy Division Director	
ORGANIZATION		
Office of Nuclear Reactor Regulation, Division of Inspection & Regional Support (NRR/DIRS)		
SIGNATURE--NCP APPROVER		DATE
		12/6/16

## NON-CONCURRENCE PROCESS

NCP-2016-021

## TITLE OF SUBJECT DOCUMENT

Inspection Procedures 71111.17T and 71111.21M (ML16147A416 &amp; ML16238A320)

## ADAMS ACCESSION NO.

See Title

## CONTINUATION OF SECTION

☐

A

☐

B

☒

C

inspection resources from IP 71111.17T to perform a new IP 7111.21N Environmental Qualification (EQ) Program Inspection will result in an overall greater assurance of adequate public health and safety through inspection.

The decision to implement the EQ program inspection and to make adjustments to the 50.59 evaluations, screenings, and modifications inspections was a result of a cross regional working group recommendation. The working group's recommendation was briefed and unanimously supported by all four Divisions of Reactor Safety and Division of Inspection and Regional Support directors. Since that time, no new information has been revealed that would otherwise alter the recommendations and decisions made.

As an agency, we have an obligation not to place undue regulatory burden on licensees and as such we limit our inspection activities and resource expenditures to only those necessary and sufficient to verify a reasonable assurance of adequate public health and safety. The agency has established a resource neutral approach to inspection and therefore we cannot just add a new inspection activity without rebalancing inspection resource and allocations within the cornerstones of safety in an effort to maximize effectiveness.

Also, it is not uncommon for an inspector take longer to perform a new inspection for the first time and a 0.2 FTE increase (as pointed out by the submitter) is negligible when compared to the entire inspection budget. The new IP 71111.21M reduces contractor inspection support and costs which must be passed on to the licensee. This may also potentially result in a small increase in NRC workload with an overall reduction regulatory burden. We believe these changes are a step in the right direction and consistent with our public health and safety mission. Therefore, we disagree with the submitter's first recommendation to hold off on making changes to our engineering inspections now as we undertake longer term efforts.

Further, we will continue to monitor and evaluate the changes being made here to ensure that our inspection resources are being used efficiently and effectively toward accomplishing the agency's mission.