

**From:** "Dave Lochbaum" <dlochbaum@ucsusa.org>  
**To:** <nrcprep@nrc.gov>  
**Date:** Thu, Dec 4, 2003 12:21 PM  
**Subject:** UCS Comments on NRC's Reactor Oversight Process

*RDB received  
12/5/03  
[Signature]*

Good Day:

Attached are comments submitted by UCS on the 4th year of the reactor oversight process. The signed, original copy is in the regular mail to NRC.  
Per the Federal Register notice, comments are due by December 31, 2003.

Thanks,

Dave Lochbaum  
Nuclear Safety Engineer  
Union of Concerned Scientists  
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*11/13/03  
68 FR 64374  
①*

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**CC:** <JIZ@nrc.gov>, <SRB3@nrc.gov>

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Call = M. Maley (MSM3)*



# Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

December 4, 2003

Mr. Michael T. Lesar  
Chief, Rules and Directives Branch  
Office of Administration (Mail Stop: T6-D59)  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT: SUBMITTAL OF COMMENTS ON THE FOURTH YEAR OF IMPLEMENTATION OF  
THE REACTOR OVERSIGHT PROCESS THING**

Dear Mr. Lesar:

In response to the notice in the November 13, 2003, issue of the *Federal Register* (Vol. 68, No. 219, pp. 64374-64375), I submit the enclosed comments on the reactor oversight process on behalf of the Union of Concerned Scientists. The notice poses nearly two dozen questions to which the Nuclear Regulatory Commission seeks answers. Rather than directly answering these questions, we used them as a guide in preparing our responses, which we grouped into three categories:

- Things we like about the reactor oversight process (not an empty category).
- Things we don't like about the reactor oversight process (not an unabridged listing).
- Things we don't understand about the reactor oversight process.

We trust the NRC staff will be able to align our responses with their questions. If any trouble is encountered, please contact me.

Sincerely,

<Original signed by>

David Lochbaum  
Nuclear Safety Engineer  
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(202) 223-6133  
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Enclosure: Comments on the 4<sup>th</sup> Year of the Reactor Oversight Process



**Union of  
Concerned  
Scientists**

Citizens and Scientists for Environmental Solutions

## Comments on the 4<sup>th</sup> Year of the Reactor Oversight Process

<b>Things We Like About the Reactor Oversight Process</b>	
<b>Annual Public Meetings in Reactor Communities</b>	The reactor oversight process instituted periodic (annual) public meetings in the communities around every operating nuclear power plant in the US. These public meetings provide an excellent opportunity for members of the public, media representatives, and local officials to interact with the NRC. Prior to these meetings, the NRC typically conducted public meetings in reactor communities only when there were significant problems. These routine, periodic public meetings allow relationships to be established to provide a foundation for better communication should problems develop down the road. <i>NOTE: UCS believes there is one aspect of these periodic meetings that prevents them from realizing their full potential, as detailed below in the section about things we don't like about the reactor oversight process.</i>
<b>Davis-Besse 0350 Panel</b>	The 0350 Panel for Davis-Besse, chaired by John A. Grobe of Region III, did a very fine job under trying circumstances. Among many commendable accomplishments and almost certain to inadvertently neglect to mention equally or even more worthy events, UCS points to the transcribed monthly meetings conducted by the panel in the evening in the community around the plant, to the telephone bridges provided for most public meetings conducted in either Region III or headquarters, to the posting of presentation materials on the NRC's website typically the day before public meetings in either Region III or headquarters, and to the generally forthcoming responses to a virtual never-ending avalanche of inquiries from Capitol Hill, media, Wall Street, and Main Street about Davis-Besse. In addition to this important public relations work, the 0350 Panel also scrutinized repairs and restart preparations at the plant. Judging from our review of the NRC inspection reports, the 0350 Panel independently verified the condition of hardware and infrastructure at Davis-Besse to the extent practical.
<b>Focused, Updated Webpages on Current Topics</b>	In April 2003, workers at the South Texas Project nuclear plant discovered boric acid crystals around two penetrations in the bottom of the reactor vessel. Shortly thereafter, the NRC created a webpage devoted to this issue and the activities related to it at South Texas Project and the industry. That webpage is online at <a href="http://www.nrc.gov/reactors/operating/ops-experience/bottom-head-penetration-leakage.html">http://www.nrc.gov/reactors/operating/ops-experience/bottom-head-penetration-leakage.html</a> . This is but a single example of a commendable NRC practice of using its website to communicate on current topics of interest. Davis-Besse and the PWR containment sump problem are other examples. Particularly noteworthy is the fact that the information on these topical webpages is frequently updated such that these webpages are usually the best places to start looking for breaking news on the subjects.
<b>Periodic Re-Assessments</b>	As UCS has often commented, a strength of the reactor oversight process is the formal, built-in provision for periodic re-assessments by internal and external stakeholders. Clearly, this solicitation of public comments is but one element of the overall re-assessment component. Coupled with the recognized change processes, the formal re-assessments demonstrate to all stakeholders that the reactor oversight process is a living, evolutionary process. Formal re-assessments allow stakeholders to identify process features that may have been working well in the past but no longer meet expectations as well as flag process features that still aren't effective. The formal re-assessments also provide very necessary feedback on the effectiveness of mid-course adjustments made to the reactor

<b>Things We Like About the Reactor Oversight Process</b>	
	oversight process. By formally soliciting comments from internal and external stakeholders, the NRC gets perspectives from as wide a spectrum as possible.
<b>Monthly Status Reports on Davis-Besse</b>	Almost from the onset of the public meetings conducted by the Davis-Besse 0350 Panel in the community, the NRC began issuing monthly status reports about Davis-Besse. These status reports were available to members of the public attending the 0350 Panel public meetings, were e-mailed to members of the public expressing interest in receiving them, and were promptly posted to the NRC's website. The status reports did an excellent job of communicating progress by describing tasks recently completed by the NRC staff and indicating tasks to be undertaken by the NRC staff in the near future. The status reports also contained a good summary of the problems prompting the creation of the 0350 Panel. The NRC staff is to be commended for this initiative.
<b>Industry Trends Program</b>	As UCS has commented in the past, the NRC's industry trends program is a good vehicle for monitoring reactor performance overall and identifying trends, whether positive or negative, at an early stage. The only improvement UCS can suggest to this commendable NRC practice would be to consider further parsing the reactor fleet into more discrete subsets than the current PWR/BWR division. For example, the NRC in NUREG-1560 ("Individual Plant Examination Program: Perspectives on Reactor Safety and Plant Performance") parsed the fleet into the following groups: BWR 1/2/3 reactors, BWR 3/4 reactors, BWR 5/6 reactors, B&W PWRs, CE PWRs, Westinghouse 2-loop PWRs, Westinghouse 3-loop PWRs, and Westinghouse 4-loop PWRs. It made sense then and makes sense now in this application.

<b>Things We Don't Like About the Reactor Oversight Process</b>	
<b>NRC Commission Accepts 49 Recommendations for Changes to Regulatory Oversight from the Davis-Besse Lessons Learned Task Force, But Many IOUs Exist One Year Later</b>	<p>The NRC thought performance at Davis-Besse was acceptable in the first quarter of 2002. The Performance Indicator Summary on March 1, 2002, showed all GREENs. Yet conditions at the plant were not and had not been acceptable for quite some time.</p> <div style="text-align: center;"> </div> <p style="text-align: center; font-size: small;">Last Modified: March 1, 2002</p> <p>In September 2002, the NRC's own Davis-Besse Lessons Learned Task Force made 51 recommendations on regulatory oversight process improvements intended to lessen the likelihood of such nasty surprises. The Commission accepted 49 of the 51 recommendations.</p> <p>In September 2003, the NRC staff updated the Commission on the status of the 49</p>

**Things We Don't Like About the Reactor Oversight Process**

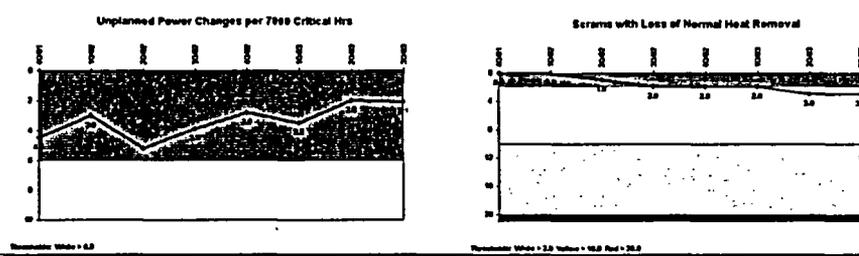
	<p>recommendations. Most are not implemented. Many still lack target completion dates.</p> <p>UCS has two major concerns about the "Davis-Besse 49":</p> <ol style="list-style-type: none"> <li>1) The correction of these known deficiencies is not a high priority at the NRC, but it should be a top priority.</li> <li>2) There is no apparent process in place to monitor the fidelity of the oversight processes as the 49 recommendations are implemented. For example, one of the recommendations was to enhance the review of foreign operating experience and its integration into NRC's domestic oversight functions. For sake of illustrating the point (but not to suggest this is what the NRC is planning or will do), consider the effect of resolving this recommendation by reassigning ALL of the NRC staff performing fire protection inspections to this task. Yes, the foreign experience evaluation is enhanced, but perhaps at too high a price.</li> </ol> <p>The NRC must accelerate its implementation of the "Davis-Besse 49" and must establish some formal monitoring process to ensure that resource reallocations do not create as many problems as are solved.</p>
<p><b>Failure to Expend Minimum Inspection Effort</b></p>	<p>A key aspect of the revised reactor oversight process is the graduated inspection program. All operating nuclear power plants are supposed to get a minimum level of inspection effort, called the baseline inspections. When actual or potential problems are identified at a plant, supplement inspections may be warranted.</p> <p>But the NRC failed to complete the baseline inspections. The baseline inspections are developed as the minimum level of effort needed by the agency to ascertain performance levels at a reactor, yet the NRC was unable – or unwilling – to expend that minimal effort. According to Attachment 7 to SECY-03-0062 dated April 21, 2003:</p> <p style="padding-left: 40px;">"These challenges required regional staff to implement short-term coping strategies that resulted in reduced baseline inspection effort. ... The inability to complete baseline inspections was a concern primarily in Regions I and III because of circumstances and unusual demands related to events at Indian Point 2 and Davis-Besse, respectively, and in some cases, the high turnover of qualified staff due to promotions, reassignments, and retirements."</p> <p>Unusual demands? Twenty-seven (27) reactors have been shut down for year-plus outages since September 1984. The majority of these 27 reactors are in Regions I and III. There's scarcely been a week during this two decade period where one or more reactors wasn't mired in the midst of such a protracted outage, entailing additional NRC oversight. That's usual. The NRC should be used to it after two decades, but apparently it is not.</p> <p>Promotions, reassignments, and retirements? Unless inspectors are the only folks at NRC getting promoted, reassigned, or retired, these challenges are also faced in other work areas. Yet the NRC has not let these challenges prevent it from completing license renewal approvals on time, from approving license amendments on time, and from reviewing applications for new reactor designs on time. Perhaps the agency is able to meet these deadlines by reassigning inspectors to its Future Licensing Organization etc. The NRC's ability to meet the deadlines for licensing actions demonstrates that it can reallocate resources as needed to complete business it views as important. The NRC's inability to complete the baseline inspections demonstrates that it does not view protecting public health and safety as important.</p>

**Things We Don't Like About the Reactor Oversight Process**

	<p><b>IT IS SIMPLY UNACCEPTBLE FOR THE NRC TO FAIL TO COMPLETE THE BASELINE INSPECTIONS AT EVERY OPERATING NUCLEAR POWER PLANT IN THE USA!</b></p>
<p><b>PI&amp;R Inspections: Looking But Not Seeing</b></p>	<p>Problem Identification and Resolution (PI&amp;R) is nukespeak for the processes used by plant owners to identify and correct problems. Effective problem identification processes find degrading conditions before they become self-revealing. For example, an inspection program should find thinning or cracking of pipe walls before it finds a puddle of water on the floor below the pipe. Effective correction programs fix problems so they don't soon recur.</p> <p>PI&amp;R is a vital cross-cutting area. If there is a common thread among the poor performing plants of the past decade (i.e., Davis-Besse, D C Cook, Indian Point, Salem, Cooper, Millstone, et al), it is that they had very serious and extensive PI&amp;R problems.</p> <p>As part of the reactor oversight process, the NRC inspects the PI&amp;R processes employed by plant owners. For whatever reason, these inspections are not effective. For example, the NRC PI&amp;R inspection at Davis-Besse shortly before the gaping hole was discovered in the reactor head concluded that its PI&amp;R program was doing well. Similar misperceptions also delayed the NRC's regulatory response at the other troubled plants.</p> <p>The NRC must expeditiously revamp this flawed inspection module to greatly improve its effectiveness. As a minimum, UCS recommends the following steps:</p> <ol style="list-style-type: none"> <li>1) NRC inspection findings for flawed problem identification and flawed problem resolution should NOT be colored by whether the underlying system is safety-related or not. The NRC's audit sample is not large enough for it to ignore any signs that the PI&amp;R processes are ineffective.</li> <li>2) The NRC's PI&amp;R audit focus should not continue to be solely on the high risk systems. This "targeting" steered NRC inspectors away from examining the series of Condition Reports on containment air cooler and containment radiation monitoring problems at Davis-Besse. A recurring series of problems, whether on high risk or low risk systems, warrants the NRC examining if the plant owner has diagnosed the true root cause and, if that's the case, why the plant owner hasn't been able to fix it.</li> </ol>
<p><b>Unplanned Power Changes Performance Indicator: Inequitable Treatment of Notices of Enforcement Discretion (NOEDs)</b></p>	<p>This PI is defined as being "The number of unplanned changes in reactor power of greater than 20% full-power per 7,000 hours of critical operation excluding manual and automatic scrams." Upon discovering a condition not allowed by the operating license when a reactor is at full power, a limiting condition of operation (LCO) is entered which specifies how long the reactor can continue operating. If the problem cannot be resolved within the LCO time, the reactor must be shut down. Thus, if a plant owner follows the rules and performs a controlled shut down of the reactor, it will count against this PI.</p> <p>On the other hand, a plant owner facing the same condition not allowed by the operating license who instead chooses to continue operating past the LCO time can do so provided the NRC grants enforcement discretion via its Notice of Enforcement Discretion (NOED) policy. This is not merely a theoretical option – the NRC granted enforcement discretion to plant owners 18 times in 2003 through October 16, 2003. Thus, if a plant owner does not abide by the operating license and does not perform a controlled shut down of the reactor, it does not count against this PI.</p> <p>This is perverse and unfair. The owner doing the right thing is penalized while the owner doing the wrong thing is rewarded. <b>THIS IS VERY, VERY WRONG!</b></p>

**Things We Don't Like About the Reactor Oversight Process**

D C Cook Unit 2 suggests the adverse consequences of this current practice. On March 13, 2003, NRC Region III granted enforcement discretion to allow D C Cook Unit 2 to continue operating longer than the LCO time with one of three Auxiliary Feedwater Pumps broken. As shown in the following PI charts, D C Cook Unit 2 already experienced a number of unplanned power changes and had also experienced enough scrams with loss of normal heat removal to cross the GREEN/WHITE threshold. The Unplanned Power Changes PI should have accounted for the March 2003 event, since a shut down would have resulted had not Region III opted not to enforce the terms of the operating license. D C Cook Unit 2 should not get doubly rewarded for Region III's largess.



**Significance Determination Process: Slow and Subjective and Now Secret**

The Significance Determination Process (SDP) is the method used by NRC to assign colors to findings by NRC inspectors. The more significant the finding, the worse that SDP works.

The NRC has a goal of finalizing SDP color selections within 90 of the associated inspection reports being issued. For four years, this goal has not been met.

Some of the criteria guiding the development of the reactor oversight process were that the process be transparent, scrutable, and repeatable. The current SDP satisfies none of these criteria.

Since 09/11, the NRC withdrew the SDP worksheets from the public arena. So much for transparent and scrutable. If the NRC persists in hiding this information from the public, then it must replace the SDP with a process that does not rely so heavily on "secret" information.

The current SDP is not repeatable. The record of YELLOW and RED findings demonstrates this point beyond reasonable doubt. Virtually every YELLOW and RED preliminary NRC finding triggers a rainbow debate: the plant owner responds with its assessment concluding a GREEN or WHITE finding and the NRC defends its YELLOW or RED finding. If the SDP were transparent and repeatable, this color charade would not be so recurring.

The current SDP is subjective. Earlier this year, Jim Riccio at Greenpeace submitted a freedom of information act (FOIA) request for the NRC internal documents related to the Davis-Besse reactor vessel head degradation SDP. These documents clearly show that the SDP kept cranking out GREEN and WHITE findings, but the NRC management wanted a RED finding. So, various perturbations and iterations were performed to generate the color that management wanted. The RED finding ultimately issued by the NRC was "justified" by page after page of math, but the use of numbers doesn't retroactively make the process objective. The process is so subjective that it can be used to "justify" any one of the four colors. That's ludicrous.

The NRC should put a stop to this SDP nonsense. UCS has no confidence at all in such a convoluted process.

**Agenda for Annual Public Meetings in Reactor**

As noted in the section above listing things UCS likes about the reactor oversight process, periodic public meetings in reactor communities are an important,

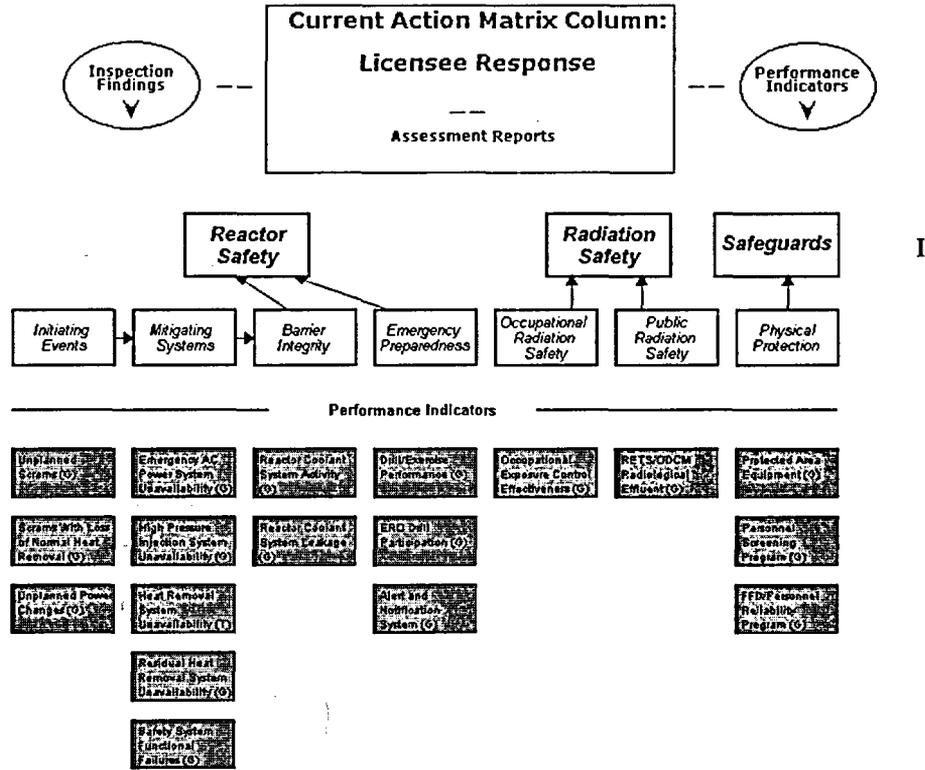
<b>Things We Don't Like About the Reactor Oversight Process</b>	
<b>Communities</b>	<p>positive part of the reactor oversight process. However, the usefulness of the public meeting is hampered by excluding public input to the agenda for the meeting. Consequently, the meetings proceed with the NRC's agenda. This causes frustration to both the NRC staff and the public. The NRC staff is frustrated by having to prepare for wide-ranging questions and then encountering unexpected questions during the meeting. The public is frustrated by asking off-agenda questions to which the NRC staff is unprepared to answer. The frustration levels of both the NRC staff and the public would be reduced if the NRC provided a mechanism for public input to the agenda. UCS offers the following mechanism as a straw-man to illustrate our point. At some time prior to the public meeting (say 30 days for the straw-man case), the NRC formally announces the time and date of the upcoming public meeting and specifies a way for members of the public to submit questions in advance of the meeting. The questions could be submitted by e-mail, fax, or phone with a submission deadline of 2 weeks prior to the meeting date. The meeting notice and question solicitation should clearly state that the purpose for submitting questions in advance of the meeting is to afford the NRC an opportunity to better match the NRC team coming to the meeting with the expressed interests of the community. UCS recommends that the NRC test this proposal via a pilot program at one or two reactor sites in each region.</p>
<b>Reactor Coolant System (RCS) Leakage Performance Indicator: Looking for Leaks in All the Wrong Places</b>	<p>This PI is one of two PIs intended to monitor the integrity of physical barriers between radioactive material and the environment. However, this PI looks only at "identified" leakage paths from the reactor coolant system. Because plants have different numerical values for "identified" leakage limits, the PI tracks percentage of the Technical Specification limit. But it does not consider, at all, the "unidentified" leakage pathways from the reactor coolant systems, which are also governed by Technical Specification limits. UCS believes this PI should be revised to trend the most limiting of "identified" and "unidentified" leakage.</p>
<b>Annual Commission Briefing on Reactor Performance</b>	<p>During the Integrated Reactor Assessment Program (IRAP) discussions that ultimately led to the reactor oversight process (ROP), UCS recommended that the NRC conduct its annual Commission briefings on reactor performance in the Regions instead of always at headquarters. While the web-broadcasting of Commission briefings has somewhat substituted for these regional Commission briefings, UCS re-recommends that the NRC conduct its annual Commission briefings in the regions on a rotational basis. A NRC Commissioner touring a reactor site rightfully gets considerable media coverage. An NRC Commission briefing in Atlanta, Chicago, Philadelphia, or Arlington would likely get even more attention. The reactor oversight process is an important regulatory tool used by the agency. The NRC should do more to showcase the reactor oversight process and its results.</p>
<b>Annual Assessment Letters and Plant Issues Matrices: Where's the Beef?</b>	<p>The NRC issues an annual assessment letter reporting its overall impression of the performance at each nuclear plant site. These annual assessment letters follow a standard template so laden with boilerplate that the product is useless. The NRC should revamp the annual assessment letter so they contain useful information or stop issuing them. Alternatively, the NRC could stamp the annual assessment letters "THIS PAGE INTENTIONALLY TRITE" in keeping with its practice for blank pages.</p> <p>The Plant Issues Matrices are compilations of current issues at each plant, largely from inspection reports and licensee event reports. The compilations are so abbreviated and condensed as to be useless. UCS recommends that the NRC try harder to make the concise issue description more understandable. The objective is not to replicate the detail from the source document, but to provide readers with sufficient understanding</p>

### Things We Don't Understand About the Reactor Oversight Process

ROP Website: Lost in CyperSpace

Information about the reactor oversight process is posted on the NRC's website. Considerable material is available, but it is organized so poorly as to be extremely difficult to access. I frequently give up when looking for information after several unfruitful clicks. BUT UCS RECOMMENDS THAT THE NRC NOT REVISE THE WEBSITE. EVERY TIME THE NRC "IMPROVES" ITS WEBSITE, IT GETS HARDER TO USE.

As an example of a problem the NRC should not fix, consider the Performance Indicator results for individual plants. Here's the webpage for Dresden:



Last Modified: October 22, 2003

have a high-resolution computer monitor set up for 1024 x 768 pixel display, yet all I see on the screen when I call up the PI results for any reactor is the top half of the information. In other words, I see everything but the PI results on the PI results screen. I don't understand why the NRC hides the dynamic information "below the fold" and keeps the static information in plain view.