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Falls Church, VA 22041



Attention: Mr. David Brater
Contracting Officer's Representative
Contract # GS00K96AJD0012
D.O. # K0096AJ9611
FEDSIM # 95103NRS-02

Subject: **TAC C90305**, NRC Public Website Redesign: Usability Study Analysis Report

Dear Mr. Brater:

Attached is the deliverable, Usability Study Analysis Report for the NRC Public redesign, required under TAC C9305.

If you have any questions, please contact me at 301-921-3121 or Dan de Iongh at 301-921-3097.

Very truly yours,

Donald L. Hanley, Jr.
Program Manager

Attachment

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CSC TAC File 6815-310
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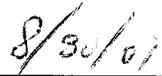
Usability Study Analysis Report
for

TAC: C90305

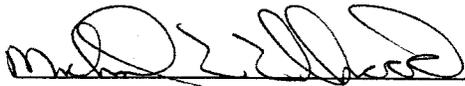
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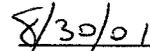
Cathi Morris
CSC CISSCO Lead Technical Reviewer



Date



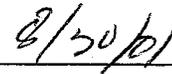
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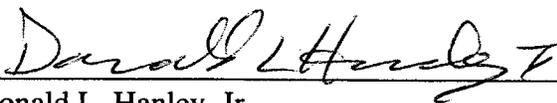
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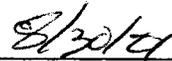
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Date



Donald L. Hanley, Jr.
CSC CISSCO Program Manager



Date

NRC WEB SITE REDESIGN PROTOTYPE SURVEY ANALYSIS
TAC 90305

**NRC WEB SITE REDESIGN PROTOTYPE
ANALYSIS DOCUMENT**

August 29, 2001

Prepared for:
Nuclear Regulatory Commission

Prepared by:
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1 Overview

1.1 Abstract

This report presents the findings from the survey analysis of the redesigned prototype for the Nuclear Regulatory Commission's (NRC's) public web site. Results were based solely on user feedback to a survey posted with the prototype and offered to a select group of users. Some of these users had been involved in the earlier analysis of the current, public web site (www.nrc.gov) and some were new to the study. The analysis suggests that overall, users are more satisfied with the prototype, although they do have some concerns and recommendations. Results from a questionnaire of user satisfaction showed that they did accept this web site design, with the satisfaction score markedly improved from the results of the original study on the current web site. Comments made by the users during testing indicated that they liked many aspects of the redesign. Areas where there was still substantial concern included the visibility and navigability of certain kinds of information and the apparent focus on certain kinds of users to the exclusion of others.

It is important to note that the survey was conducted on a prototype and not on a finished product. Because of this, many functions, features, and documents were not available. Users were told of this in the introduction to the site (see Appendix E), but some did not seem to understand or just did not like that these functions, features, and documents were not available, and they commented on them as such.

1.2 Introduction

1.2.1 Background and Purpose

In response to guidance from the Commission in a Staff Requirements Memorandum of December 13, 1999, the Office of the Chief Information Officer (OCIO) was designated as the lead office in an effort to redesign NRC's public Web site. This involved making the agency's public Web site easier to navigate, improving the process of locating information while ensuring that information is available in a timely way and facilitating information exchange with agency stakeholders. A key component of the Commission's guidance was that the agency

Solicit the views of stakeholders who are frequent users of NRC's and other web sites as well as the views of others with experience retrieving information from the Web, such as members of the general public, researchers, and representatives of the library community.

The OCIO sought assistance from Computer Sciences Corporation (CSC) to redesign its public web site (www.nrc.gov). The primary objectives were to improve the public's access to information at the site, improve site navigability, improve site maintenance processes, and comply with Section 508 of the Rehabilitation Act and other related legislation.

The NRC web site is the electronic interface to the outside world. There are several reasons why the NRC needs to redesign its web site. These include, but are not limited to, the following:

- The web page links are inconsistently placed from page to page;
- Information on some web pages is poorly formatted;
- Navigation through the site is difficult; and
- The site does not provide the usable access desired.

The desired result of this project was to provide a mockup design to use as a template, or starting point, to proceed with the full redesign of the NRC's web site in the near future. This project has high visibility and will be reviewed by the Commissioners.

This report presents the process and findings of CSC's analysis of user comments of the redesigned NRC web site prototype and the major recommendations arising from it.

1.2.2 Scope and Perspective

The scope of the survey and this analysis was the redesigned NRC public web site prototype (hereafter referred to as the prototype). It does not include any links to the current NRC public web site (www.nrc.gov) hereafter referred to as NRC's current web site. Nor does it refer to any external links.

The recommendations in this document aim to improve usability for the audience groups, and do not consider implementation issues such as cost or difficulty. However, it is understood that the NRC's decisions about which recommendations to implement will consider cost and schedule, and to this end an assessment of criticality (high, medium, or low) is provided with each of the detailed recommendations, to assist in making these decisions

In addition, some users noted errors in the content. While this information is very helpful, and will be passed on to the appropriate offices, these comments are not within the scope of this study and will not be addressed in this document.

1.2.3 Web Site Audience Groups

The international standard ISO 9241-11¹ defines usability as "the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use" (p. 5). The users specified for this study of the redesigned NRC web site prototype, are its twelve principal external stakeholder groups:

- NRC Licensee
- State or Local Government.
- International
- Public Interest
- Nuclear Industry
- Law Firm

¹ ISO 9241, *Ergonomics requirements for office work with visual display terminals (VDTs) - Part 11: Guidance on usability specifications and measures*

- News Media
- Congress
- Other Federal Employee
- Researcher
- Consultant
- General Public

In addition, this study considered the comments and objectives of the internal stakeholder group, referred to as Internal NRC Employees.

Users who did not fall into one of these stakeholder groups classified themselves as “Other”.

1.2.4 Document Structure

- The rest of this document comprises three major sections:
- **Section 2 – Positive Comments**
- **Section 3 – Recommendations with Comments** for Improvement presents the detailed recommendations, with criticality ratings, and sample comments. This section is aimed at those who will decide which recommendations to be implemented and at those who will implement them.
- **Section 4 – Results and Discussion** details the processes and findings of the usability testing.

The appendices present additional details of the analysis, particularly about the tools used. Also included is the complete list of comments from the users.

1.3 Process

User surveys based on feedback are helpful to assess and compile reactions [to] and usefulness of the web site. Information was collected from the 12 main external stakeholder groups and from the internal stakeholders as well.

All participants were selected by the NRC. An attempt was made to contact all of the 31 external participants from the original study⁵, however only 14 users responded for this study. Internal NRC participants were notified via a notice on their Intranet and approximately 140 external participants, with representatives from each of the stakeholder groups were contacted by email. All participants were given directions to access the online Welcome page (see Appendix E). This information included the URL and a password that was used to identify their group – either employee, new user, or returning user. Once a participant had accessed the Welcome page, further directions addressed additional information about the prototype and provided links to the prototype site, and to the survey.

Feedback from the users was collected and recommendations were developed from that feedback as well as from the Web Redesign Steering Committee. Throughout the process the needs described in Section 1.2.1 – Background and Purpose were considered, however the

recommendations do not necessary address each of the needs, but rather address the shortcomings of the prototype as is currently exists.

1.3.1 Surveys

Participants were asked to describe their stakeholder group, their connection type and the frequency with which they currently use the NRC public web site. They were also surveyed whether they felt the redesigned site would assist them with their work, to gain their opinions about the major content areas, and to gather any further comments. The entire survey, as posted, appears in Appendix A.

The first ten numbered questions in the survey were taken directly from the System Usability Scale (SUS) and measure user satisfaction. SUS is a ten-question instrument that yields a 100-point scale with the following interpretation²

Score	Interpretation
80-100	Likes
60-79	Accepts
0-59	Dislikes

More information on the SUS appears in Appendix B.)

1.3.2 Unexpected event that may have introduced bias

Approximately two-thirds through this study, a news organization published a summary of the most critical comments received from a citizen's group representative. Since the news organization published the URL of the prototype, concerns were raised that the survey forms received after this event could bias the results.

To address this concern, a t-test³ was conducted to determine if there was a significant difference between the "pre-quote" scores (the set of comments that were received before the publication of the quote) and the "post-quote" scores (the set of comments that were received afterwards). The t-test yielded no significant difference between any of the pairings indicating that the event did not have an effect on the feedback (for External, $t_{\alpha=.05}(40) > 0.05$, for Internal, $t_{\alpha=.05}(79) > 0.05$, and for both groups combined (All), $t_{\alpha=.05}(119) > 0.05$).

² SUS interpretations were obtained from colleagues in other companies and from the developer of SUS, all of whom have used the instrument on a wide variety of software applications and web sites.

³ A t-test is used to measure whether difference between two groups is sufficiently large to justify the conclusion that this difference is due to an effect other than chance. For further information, refer to Howell, D. C. (1992). *Statistical Methods for Psychology (3rd ed.)*. Boston: PWS-KENT.

1.4 Summary of Feedback

As previously mentioned, the results were, largely, positive. Satisfaction scores were substantially higher than they had been for the existing web site, and many positive comments were received. Section 2 presents and summarizes the positive comments that were received.

As always, however, there is room for improvement; and even users who were very satisfied tended to have one or more suggestions. Section 3 presents the suggestions for improvement.

Suggestions covered eight major areas; however, many of their comments fell into more than one major area:

- **Home page design** — Overall, most users felt that the look and feel of the home page had improved, although those who disagreed felt strongly about it. A number of users offered comments about the home page, mainly on six topics:
 - Important links too far down on the page
 - Too many pictures
 - Need for direct links to Daily Reports, etc., on home page
 - ALT text obscured the drop-down menus
 - Inadequate items in the drop-down menus
 - Too much space occupied by press releases
- **Visibility of information** — Several types of information were identified by respondents as not being sufficiently visible or navigable from the home page.
- **Navigation support** — Most respondents liked the devices used for navigation (breadcrumbs, left-side panel, drop-down lists from the home page).
- **Diversity of user needs** — Some respondents felt that the site addressed one or two types of users well, but did not meet the needs of others. Interestingly enough, respondents disagreed on which types of users had their needs met.
- **Placement of Information** — Some comments addressed the layout of content and links within the pages.
- **Presentation of Information** — Some comments addressed the manner in which content was presented, such as too many graphics, not enough icons.
- **Organization of Information** — Some respondents felt that some areas were not as well organized as they should be.
- **Accessibility** — A few users made recommendations that addressed the site's accessibility to people with disabilities. Most of the comments were suggestions that we make sure we addressed accessibility, however, some of the suggestions received would have negatively affected usability. (Note: Accessibility as required by Section 508 of the Rehabilitation Act was built into the prototype from the beginning.)

Some users noted errors or inadequacies in the content of the site as prototyped. This document focuses on usability, however, and does not address content. Nevertheless, this information is very helpful, and has been passed on to the appropriate NRC Offices.

1.4.1 User Feedback Survey findings

The survey (user information and Questions 11-17) showed that the respondents were mostly neutral on the issue of whether the prototype will help them participate in the regulatory process (Question 11), although twice as many of the remaining participants felt that it would. More than half the respondents agreed that the prototype helps them understand NRC's mission, goals, and performance (Question 12). They were divided on the issue about ease in finding information (Question 13). Although more than twice as many respondents felt that the prototype made it easier to find information, there was a small subset of respondents who felt that it still was not easy to find information on the prototype.

As for the content areas, all content areas except for the Electronic Reading Room received at least twice as many ratings of "Satisfactory" as they did of "Needs Improvement," indicating that, in general, these content areas are relatively acceptable. For a ranking of the content areas based on the ratio of responses of "Satisfactory" to responses of "Needs Improvement," the order from highest to lowest is as follows:

- Who We Are
- What We Do
- Nuclear Waste
- Facilities by State
- Public Involvement
- Nuclear Materials
- Nuclear Reactors
- Using this Site
- Electronic Reading Room

1.4.2 Satisfaction

User satisfaction is one of three components of usability as defined by ISO 9241-11. Efficiency, a user performance variable and Effectiveness, a user output variable are the others⁴. This study did not employ the method of usability testing to gather measures for Efficiency and Effectiveness and was confined to gathering Satisfaction, as well as other user feedback by surveying the users. The difference between usability as a whole and satisfaction as a component of usability is an important distinction; however, the author of the SUS information in Appendix B, does not make this distinction in his paper.

The satisfaction scores of the prototype (from the SUS, Questions 1-10 of the survey) increased from the analysis of the current NRC web site.. Overall respondent ratings of the current NRC web site (from the earlier study⁵) had ranged from 7.5 to 87.5 (on a 100-point scale), with an average of 54.2. This indicated that they generally disliked using the current site. For the prototype of the new design (the current study), scores were considerably higher; ranging from

⁴ Kirakowski, J., 1998, SUMI User Handbook, Human Factors Research Group, University College Cork, Ireland.

⁵ Refer to the NRC Web site Current System Assessment Document (CSAD)

20.0 to 100.0 with an average of 70.0, indicating that respondents generally accepted the new prototype. A t-test³, indicated that this increase is statistically significant $t_{\alpha=.05}(164) < 0.0001$.

In the earlier study, it had been found that the internal stakeholders gave the site the lowest rating (29.3); but for the prototype, this group gave an average rating of 69.6. This too provided a significant result for the t-test, $t_{\alpha=.05}(90) < 0.000001$. Additionally, in the earlier study the external users (all external stakeholders combined) gave the current site a rating of 64.2 but for the prototype, the combined score of all external users was 70.5. The t-test for this comparison was not significant, $t_{\alpha=.05}(72) > 0.05$. Both groups' satisfaction improved; and the ratings given by the internal NRC respondents improved considerably more than those of the external respondents.

1.5 Recommendations Highlights

The redesigned NRC web site prototype contains important and valuable information for all of its audiences. Locating that information, however, may be difficult because the site needs to address several different at the same time and to engage the public. This section highlights the major design recommendations we believe best achieve this goal. Note that Section 3 – Recommendations with Comments for Improvement repeats this information but includes a general recommendation for grouped comments, a priority rating (low/medium/high) and it adds the specific user comments that are related to each recommendation.

Home Page

Placement on the home page

- Restore all popular event reports on the home page
- Restore link to News and Information on the home page
- Add links to the home page to increase visibility of some information, such as license fees
- Reduce the number of news releases on the home page

Location on the home page

- Ensure that Contact Us is obvious and above the fold
- Move all graphics “up” on the home page so that more things fit above the fold

Visibility (appearance) of items currently on the home page

- Make the “Report a Safety Concern” link more visible
 - Make the “About Radiation” link more visible
 - Make student and teacher information more visible
-

Visibility of Information

Access from drop-down links

- Include a link to the second-level page from each of the drop-down lists (e.g. link to the “Reactors” page from the Reactors drop-down list)
- Provide additional links in the drop-down lists
- Add a short delay to the drop-down lists

Access to lower level information

- Add links for radiation workers – allegations, etc.
- Consider creating a more direct link to ADAMS
- Ensure that the NRC phone book is above the fold on the “Contact Us” page and rename it NRC Telephone Directory.
- Ensure that all important and frequently accessed information appears above the fold (on all pages)
- Move links to dynamic information about each plant above the fold on the plant information pages.

Navigation Support

Continuity

- Create a custom 404 error page and include references to the new versions of the top 20 pages

Diversity of User Needs and Organization of Information

Organization of Information

- Add quick links for the reactors, materials, and waste for power users
- Change “Facilities by State” to “Find a Facility” and provide organization by state, region, and facility.
- Add cross-cutting information (major areas that cut across reactors, materials and waste such as, radiation protection, emergency preparedness and safeguards)
- Add a page with links to all of the collections by type of document (make sure to include all possible listings [esp. NUREGs])

Placement of Information

Placement of information on lower level pages

- Consider adding information directly to some of the lower level pages rather than linking to the information. (The issue of exactly what to add and what to link to will need to be addressed on a case-by-case-basis.)

Presentation of Information

Tone and Presentation

- Make the home page project a greater concern for public health and safety.
- Make font size more comparable across different platforms

Map Adjustment

- Fix maps that are out of proportion

Accessibility and Performance

Accessibility and Performance

- Ensure Section 508 requirements are met.
 - Try to improve system performance
-

In addition, the remainder of Section 3 describes the set of user comments not recommended for implementation (Section 3.8), user comments arising from possible misunderstandings (Section 3.9), issues (Section 3.10), and the way in which content is addressed in this study (Section 3.11).

2 Positive Comments

As evidenced by the SUS scores (see Section 4.1.1), the general, overall impression of the prototype was favorable. Many users (both internal and external) commented on the improvement in navigation and look and feel of the new site. The following lists highlight comments from both sets of users (External and Internal NRC Staff).

2.1 Positive Comments from External Users

User Type	SUS Score	Comments
Nuclear Industry	87.50	Nice job overall!
Radiation Safety Officer		In general I like the look and feel it is not cluttered like too many sites. The pop down menus on the tabs like "What we do" etc. are nice.
Consultant	65.00	I liked the idea of bundling like information such as electronic documents together.
Nuclear Industry	75.00	Good job. I especially liked the links to the Federal Register in the Public Involvement section.
International	87.50	In my opinion the site is well designed for the public.
Government	85.00	This site is by far the most User helpful NRC site I have seen thus far. I was impressed with the accessibility and usability of the information provided.
Other	95.00	Overall, the prototype site is an impressive improvement over the current site. The biggest improvement is the ease of navigation. POSITIVE NEW FEATURES OF THE PROTOTYPE SITE: (1) With the prototype, I can tell exactly where I am in the site. (2) The navigational aids are consistently placed on the pages and visually attractive. (3) Typically, it takes 2 fewer "clicks" on the prototype to access the areas of the site I use most often than it does on the current site. (4) The second-level pages are MUCH cleaner. On the average, the second-level pages on the current site have about 15 navigational links (range 3-35, not counting the common navigation links). The prototype pages have about 10 links (range 4-19). (5) The new "drop-down" list navigational feature is very helpful. (6) As a medical person, I can get to medical topics on the prototype in one click. I've looked on the current site for over three years and still can't find it. (7) The prominent placement of the "Search" feature on the prototype will be very useful when implemented.
Federal	55.00	The overall look and feel of the top-level of the site is pleasing despite the over-abundance of information.

User Type	SUS Score	Comments
Consultant	75.00	I like to monitor plant status. I believe that the archiving of old Daily Status Reports will help me look backwards for trends. // The site now has a more "polished" presentation to it.
Nuclear Industry	90.00	Good site, with good links overall. I found it generally very user friendly. The multiple cross links and different ways to get to information was also very helpful. I did not have to continually go back to the originating page. I also like the ease of seeing what the specific link was at the top of the page. It makes further navigation easier.
Licensee -- Reactors	97.50	The new site is great. Overall this is a very good improvement and more pleasing to the eye.
Licensee	100.00	I like the redesign. I found the layout and functionality much better.
Other	90.00	As a student in nuclear engineering trying to find more information about the field, the new page is much more user-friendly that the old one. Good work, and I hope it goes online soon.
Licensee -- Reactors	95.00	Great improvement over the current site.
Nuclear Industry	97.50	I found the new NRC Web site to be a significant improvement in appearance with much better navigation tools. While it is still in development, if the links and content quality is used throughout the site, the site will provide a better view of the NRC and how it does business. I was particularly impressed with the page 'using-this-site'. The several tools provided here will make locating information much easier. Clearly a plus for the new user as well as those that use the NRC site regularly. The posting of 'New Content' will be very useful feature. Good start on a much improved site.

2.2 Positive Comments from Internal NRC Staff

SUS Score	Comments
82.50	For "eye wash" factor alone this is a great improvement. I think it looks great and from a functionality standpoint, it seems much more user friendly than the old site.
95.00	Good job. Please continue to complete work-in-progress in similar fashion.
82.50	I really like the new design. It seems much crisper and more moden than the old button site. Overall an excellent effort that will increase the public' confidence and acces.
100.00	You are doing a great job. Overall the new site looks very good.
100.00	More responsive than ADAMS. More intuitive than STARFIRE.
47.50	Great use of pictures.

SUS Score	Comments
77.50	The new website looks more user friendly and more similar to other websites than the previous website. Looks good!
75.00	I really like the design of the first page. It looks great.
80.00	The rest of the site is terrific.
100.00	The site looks great. Very appealing to the eye. Great job to the designer.
72.50	1) I like the Home page presentation of "How We Work," "How We Regulate," etc. This layout is much better than the current Home page layout.
77.50	Much improved from the current design with regard to ease of locating information.
75.00	It definitely seems more user friendly and easier to stumble around and actually find what you want.
95.00	Very nice job and the site looks great. Vast improvement!
92.50	Overall, I give the prototype an A+++ . It's a vast improvement over our current web effort. I'm happy to see the prototype taking on more of an educational/informational flavor, rather than an elaborate gopher site (our current web page).
92.50	Don't think improvement is needed at this time. Just wanted to let you know I enjoyed looking through the site. I think students would find it quite interesting.//
85.00	The new web design is a substantial improvement. I'd expect that users should be able to readily find information...
77.50	I found the site to be a vast improvement over the current site, in terms of both functionality and appearance.
52.50	The site is visually more appealing.
	The public document room link has been improved considerably! It's easier to find things now.
100.00	Very nice re-design.
80.00	I thought this is a very good start. I appearance is so much better than the former.
67.50	Good Job. These changes are long over due.
82.50	I like the new look and feel. Much more eye catching and visually much nicer than what we have now.
60.00	WOW!! The site is vastly improved from the current site, more modern design, gives better pictures of what we regulate...

3 Recommendations with Comments for Improvement

The recommendations presented in this report are the result of comments about the usability that were important enough to consider refining the design (see Appendices C and D for the entire list

of comments). This section highlights the recommendations that arise from the comments, and also presents an approach to implement. Each recommendation includes a rating of its priority (high, medium, or low) and a list of related, sample user comments.

The sample user comments are a tabular list of comments from the users. They include the following information:

- User – The type of user as indicated by Question 16 of the survey from a list of stakeholder types.
- Comment – Taken directly from the survey’s open-ended comment section (approximately 4 of these comments came from emails sent separately from the survey).
- Cross Reference -- some of these recommendations have already been incorporated and their implementation is currently in progress. Furthermore, a comment may address more than one recommendation and so it may be listed twice. If that is the case, a cross reference (recommendation number) is listed in the rightmost column (Cross Reference / Notes)
- Notes –It is important to realize that we have included all comments that relate to the listed recommendation; however, some of these “recommendations” are inconsistent with good design practices and the goals of the agency’s redesign effort and they may not reflect the overall tone of the comments. The wording for these recommendations will begin with “Consider” and our concerns will be noted as such in the Cross Reference / Notes column.

3.1 Home Page

3.1.1 Placement on the home page

Recommendation: Put important and frequently accessed links on the home page. This includes the following:

- a. Restore all popular event reports on the home page
- b. Restore link to News and Information on the home page
- c. Add links to the home page to increase visibility of some information, such as license fees
- d. Reduce the number of news releases on the home page

Priority: Medium to High

Sample user comments:

User	Comment	Additional Related Recommendations
Licensee	I need to quickly and easily access information such as Morning Reports, current FOIAs, press releases, and docket documents and NRC issuances for power reactors from both current and historical perspectives. My need is to know what is going on in the industry (operating/regulatory experience) or alternately, to understand through the paper trail a past or present regulatory issue or event.	3.4.1
Licensee	Need a central link to meetings, releases, new issues and other information that we need on a daily basis.	3.4.1
Licensee (Reactors)	The daily NRC reports were somewhat difficult to find. This is probably the most used and should probably be more obvious.	
Consultant	Take titles of news releases off the home page.	
Federal employee	High accessed areas of the site should be made plainly accessible at the top level - to minimize access issues.	
Nuclear Industry	My interest is in quick and easy access to LERs, I&E reports, NuRegs, 10CFR50, etc. I can reach this information in 2 or 3 clicks on the existing system using "News & Information" or "Reference Library".	
Law firm	The "Commission Activities" link should appear on the front view of the web site.	
User's group is unknown	I strongly believe that these areas i.e. radiation protection, emergency preparedness, safeguards, and other that are very visible and are of great interest to the public and industry need a more visible presence (up front) rather than being buried as a sublink or whatever it is called.	3.2.2 and 3.4.1
NRC Employee	I could not find a quick tie to information or performance of a particular facility (e.g., Quad Cities Nuclear Power Station). This information is readily available on the existing web site and I think it is valuable to the public. I would expect to find this under "Nuclear Reactors" on the home page. Please make this information easier to find.	3.4.1
NRC Employee	I think the public oriented person would use the site location icon first to locate information regarding the plant. I saw no ties to event reports, assessment that would loop them to that information.	3.4.1

User	Comment	Additional Related Recommendations
NRC Employee	Need to make certain key documents that should be communicated "stand out". For example, the use of news is well done and facilitates things need to see immediately. There should also be a highlight for the Strategic Plan, since that is what drives the Agency. To find the Plan as in the proposed and current web site, you have to do some searching and guess where it might be located.	3.4.1
NRC Employee	Radiation Protection and Emergency Planning are no longer major topics as they are on the current site... why?	
NRC Employee	Where is the REFERENCE LIBRARY and NEWS & INFORMATION??? Didn't find it easily by surfing, and that is the test.	
NRC Employee	Perhaps some user friendly buttons on the very first page. Since I understand the IG got a little icon, why can't financial management get one	
NRC Employee	Takes me 2 clicks from home page to get daily events in existing system, 4 clicks in new. Not an improvement.	
NRC Employee	The toll-free safety hotline number and the toll-free operations center number should be featured prominently on the home page and on the page for each region.	3.5.1
NRC Employee	The MOX Website should be listed under "KeyTopics"	
NRC Employee	Please consider providing a dedicated link on the Home page entitled "Regional Office Locations". Currently, one must search through "who we are" to find "locations" to access the Regional Office information.	3.4.1
NRC Employee	I thought that the "Headlines" portion of the page was confusing. It shows "From our Newsroom", "Daily Headlines", and "Key topics". I would eliminate the "Daily Headlines" and keep all news items under "From our Newsroom".	
NRC Employee	Why is our front page covered with meeting notices? Is that the best we can do?	
NRC Employee	Strongly recommend putting news releases on a following page.	
NRC Employee	Is there a button on the home page for the Agency Annual Performance Report ? The Mercatus Center at George Mason University gave as a poor mark last yr because the Report was not found at the NRC web site and was somewhat difficult to obtain. (ML010390356)	

User	Comment	Additional Related Recommendations
NRC Employee	Is there a button on the home page linking to the video-streaming schedule for Comm meetings?	
NRC Employee	I question the need for having all the news briefings.	
NRC Employee	The home page has way too many headlines, it is more like the OPA page than the NRC home page. It also has too much white space.	
NRC Employee	The method in which the daily events and plant status reports are displayed should be improved. I believe a member of the public coming to our site would be more interested in viewing events about the plant in his immediate area than events on any particular date.	
NRC Employee	Information needs to have easy access. For example, I like the way the Press Releases are listed right on the home page. Why not list public meetings right on the Public Involvement page as opposed to providing yet another link?	3.4.1
NRC Employee	I believe most users will be potential applicants or licensees. I believe they would find it very frustrating to try to get to the specific information they need in order to apply for a license. For example, it was very frustrating to find license fee information (found it only after going to many different places). I think there should be something right up front called how to get a license, and once you get to that page, it should tell you, or link to, everything you need to know—forms to submit, how to get those form, what the fees are, etc. If it is intended to put that info in the Tool Kits, I think they should be more highlighted on the first page.	3.4.1

3.1.2 Location on the home page

Recommendation: ensure that important and frequently accessed information that may have already been on the home page appears “above the fold” on an 800x600 display. This includes the following:

- a. Ensure that Contact Us is obvious and above the fold
- b. Move all graphics “up” on the home page so that more things fit above the fold

Priority: Medium to High

Sample user comments:

User	Comment	Cross References / Notes
Radiation Safety Officer	I did not find phone numbers for the regional offices or an e-mail link this would help some users to get information or report concerns.	
Licensee (Reactors)	The Electronic Reading Room should be moved closer to the top.	
NRC Employee	It was not easy for me to find information on the site unless I already knew a lot of specifics about the activity. For example, the site helps me identify when a public meeting on an issue will be held. However, it tells me nothing about how a nuclear reactor works, what systems or components are supposed to do, what the purpose of containment is, the health effects of radiation, or other info essential to understanding what NRC does. Why identify where BWR and PWR reactors are if we don't explain how they are different?	3.2.1
NRC Employee	The icon for filing a safety concern is too small. It implies that whistleblower concerns are not taken serious because of the designated space allotted on the main page.	3.1.3
NRC Employee	The teacher's and student's corners are buried in the page. I would make a direct link from the main page.	3.1.3
NRC Employee	The materials inspection area could stand some bolstering. For example, the home page should list a quick link for people who need to report an incident and it should give the HOO phone number as well as some regulatory references to materials reporting requirements (such as 10 CFR 30.50, Part 20.xxx, Part 21, and so on..)	3.1.3
NRC Employee	How does a member of the public speak to a warm body at NRC if they have a question.	3.2.2
NRC Employee	I was not able to figure out where on the new site the NRC directory is located. On the old site, it was one click from the home page.	3.2.2
NRC Employee	One of the primary purposes for the web should be to provide employment information to outside individuals. I feel this category should be more apparent on the home page so applicants don't have to scroll across objects to find it. Perhaps an employment icon. I've looked at several other agency web sites and they normally have something right on the home page to direct perspective employees to the employment section of the site.	

User	Comment	Cross References / Notes
NRC Employee	This web page is a redesign of the previous page and has the same "missing the point" flaw of the current one. It is geared toward licensees and public interest groups. Very little of it is geared toward the public and would not promote public confidence. What should hit a member of the public when they first see the page is the public health and safety function of the NRC. Citing the mission statement doesn't do it. The rest of the site deals with regulatory work with little connection to the public health and safety. It is full of techno talk and no "we care for your health and safety" message.	3.6.2
NRC Employee	One should not have to scroll to get to the important part of the page. Consider putting the pictures at the bottom.	
NRC Employee	The first screen does not fit on my screen and requires me to scroll down. What is showing may not interest me if I am a public looking at the page.	3.7.1
NRC Employee	The website lacks a telephone locator.	3.2.2

3.1.3 Visibility (appearance) of items currently on the home page

Recommendation: Make items that currently reside on the home page more visible. This may include increasing the size of a button or link or using color to make it stand out. This involves the following:

- a. Make the "Report a Safety Concern" link more visible
- b. Make the "About Radiation" link more visible
- c. Make student and teacher information more visible

Priority: Medium

Sample user comments:

User	Comment	Cross Reference / Notes
NRC Employee	The icon for filing a safety concern is too small. It implies that whistleblower concerns are not taken serious because of the designated space allotted on the main page.	3.1.2
NRC Employee	The materials inspection area could stand some bolstering. For example, the home page should list a quick link for people who need to report an incident and it should give the HOO phone number as well as some regulatory references to materials reporting requirements (such as 10 CFR 30.50, Part 20 xxx, Part 21, and so on..)	3.1.2

User	Comment	Cross Reference / Notes
NRC Employee	The teacher's and student's corners are buried in the page. I would make a direct link from the main page.	3.1.2

3.2 Visibility of Information

3.2.1 Access from drop-down links

Recommendation: Provide access to items by use of the drop-down lists. This involves the following:

- Include a link to the second-level page from each of the drop-down lists (e.g. link to the "Reactors" page from the Reactors drop-down list)
- Provide additional links in the drop-down lists
- Add a short delay to the drop-down lists

Priority: Medium

Sample user comments:

User	Comment	Cross References / Notes
NRC Employee	The maps need to be linked so that they are more easily located, e.g, under the "Maps" pull-down menu.	3.4.1
NRC Employee	It was not easy for me to find information on the site unless I already knew a lot of specifics about the activity. For example, the site helps me identify when a public meeting on an issue will be held. However, it tells me nothing about how a nuclear reactor works, what systems or components are supposed to do, what the purpose of containment is, the health effects of radiation, or other info essential to understanding what NRC does. Why identify where BWR and PWR reactors are if we don't explain how they are different?	3.1.2
NRC Employee	The information I use the most in accessing from home is the rulemaking page and the research home page. Neither is readily available from the re-designed home page.	
NRC Employee	"What We Do" - Should have a drop down off of how we regulate otherwise a number of very important functions/offices are buried on the site.	
NRC Employee	On 1st page, pop up text menus require mouse to be over rect. text box below the figure. The pop up should occur if the mouse is on top of the larger region which includes the associated figure also. This would make it easier to use.	3.8.1

3.2.2 Access to lower level information

Recommendation: Provide links to information that is currently not accessible (this may include making some lower-level links that already exist, more obvious/direct). This includes the following:

- a. Add links for radiation workers – allegations, etc.
- b. Consider creating a more direct link to ADAMS
- c. Ensure that the NRC phone book is above the fold on the “Contact Us” page and rename it NRC Telephone Directory.
- d. Ensure that all important and frequently accessed information appears above the fold (on all pages)
- e. Move links to dynamic information about each plant above the fold on the plant information pages.

Priority: Medium to High

Sample user comments:

User	Comment	Cross References / Notes
Consultant	I think the site map program could be expanded to an actual site map with a layout such as you find in an organization chart format to show further down in the site where to find the detailed information.	
User's group is unknown	I strongly believe that these areas i.e. radiation protection, emergency preparedness, safeguards, and other that are very visible and are of great interest to the public and industry need a more visible presence (up front) rather than being buried as a sublink or whatever it is called.	3.1.1
NRC Employee	I think I checked every section of both the new and old Web site, but could not locate anything telling the NRC staff or public where/how to locate documents which are available from "Distribution."	
NRC Employee	For emerging technologies, we should have a link where the latest Policy and Guidance directives are posted, such as the June 12, 2001 guide for intravascular brachytherapy, the HDR licensing guide and the transportable HDR supplement. We mail these documents out manually now upon request, why not just put them within the users' easy reach??	
NRC Employee	I could find no quick way to ADAMS.	
NRC Employee	The site still does not lead one readily to Commission and Licensing Board orders in various adjudications. I think it is confusing to list adjudicatory hearings with public meetings.	

User	Comment	Cross References / Notes
NRC Employee	I was not able to figure out where on the new site the NRC directory is located. On the old site, it was one click from the home page.	3.1.2
NRC Employee	I suggest a more direct route to documents available for comment, e.g. proposed rules. Some people are looking for these for information and not with the intention of commenting.	
NRC Employee	Expanding the Enforcement Document's "Enforcement Page" to include a drop down menu (similar to the home page drop downs) to illustrate/list the other documents on the Office of Enforcement's page. In other words, I found it difficult in locating the Enforcement Manual and Enforcement Policy Guide - documents I use almost daily.	
NRC Employee	Enforcement is not readily found, yet is a key component of public confidence. It took me over 1/2 hour to find the OE home page the first time. If we can put research and AGRS on the pull down boxes over reactors, materials, and waste, we can put enforcement there, too. I understand our page gets a significant number of hits currently - it should be easier for the public to find.	
NRC Employee	Consistency appears to be stressed over providing the users what they want to see at a high enough page level on the site.	

3.3 Navigation Support

3.3.1 Continuity

Recommendation: Provide continuity from the original web site to the new web site. This includes the following:

- a. Create a custom 404 error page and include references to the new versions of the top 20 pages

Priority: Medium

Sample user comments:

User	Comment	Cross Reference / Notes
Law firm	Given the fact that the current site has been in place for sometime, you must provide stakeholders with some sort of template, schematic, or index that can be used to locate where in the new site you have moved links to the current web site. Without such a reference the average user will spend undue time trying to navigate the system.	
NRC Employee	Couldn't you provide a chart telling us that information under XXX area on the old site is now under XXX on the new site.	

3.4 Diversity of User Needs and Organization of Information

3.4.1 Organization of Information

Recommendation: Provide a mechanism for grouping similar types of links. This includes the following:

- a. Add quick links for the reactors, materials, and waste for power users
- b. Change “Facilities by State” to “Find a Facility” and provide organization by state, region, and facility.
- c. Add cross-cutting information (major areas that cut across reactors, materials and waste such as, radiation protection, emergency preparedness and safeguards)
- d. Add a page with links to all of the collections by type of document (make sure to include all possible listings [esp. NUREGs])

Priority: Medium to High

Sample user comments:

User	Comment	Cross Reference / Notes
Licensee	I need to quickly and easily access information such as Morning Reports, current FOIAs, press releases, and docket documents and NRC issuances for power reactors from both current and historical perspectives. My need is to know what is going on in the industry (operating/regulatory experience) or alternately, to understand through the paper trail a past or present regulatory issue or event.	3.1.1
Licensee	Need a central link to meetings, releases, new issues and other information that we need on a daily basis.	
Licensee (Reactors)	Would be nice to have a spot for each plant from which you could access all documents pertaining to that plant rather than having to search through all the material.	

User	Comment	Cross Reference / Notes
Radiation Safety Officer	There needs to be a clear link to the regulations and Nureg series. I could find them going to the electronic reading room but a more direct link might be better.	
Nuclear Industry	Make it clearer and easier to find and view SECY letters.	
Consultant	I want to be able to go the NRC web site and find the latest information on spent fuel storage and transportation. I don't need a description of spent fuel and I want to be able to get to my interests with minimum clicks.	
Nuclear Industry	I might suggest what has developed by default in the past -- two gateway pages. One would be for the general public, not regularly involved with NRC-- the home page. The other would be a "frequent users" gateway -- what the OPA page has become by default. For the latter, the principal feature should be a collection of those links that those of us in the business would use, which tend to be several levels down from the home page (e.g., SECY, 10CFR, Reg Guides).	
Nuclear Industry	The info I use most often appears on the current Reference Library and News & Information pages. I did not see this same info readily available on the new site.	3.1.1
Public Interest	There is a lot of information; however, the navigation is cumbersome. There is a lot of useless public information more appropriate for the general public than a member of a public interest group. Basically, I need to be able to research the site quickly and with precision. I need to find information about ongoing NRC activities easily, without having to mine through the site.	
NRC Employee	I could not find a quick tie to information or performance of a particular facility (e.g., Quad Cities Nuclear Power Station). This information is readily available on the existing web site and I think it is valuable to the public. I would expect to find this under "Nuclear Reactors" on the home page. Please make this information easier to find.	3.1.1

User	Comment	Cross Reference / Notes
NRC Employee	<p>I interact many times daily with materials licensees and members of the public who wish to obtain new materials licenses or amend/renew existing licenses. We should have some quick links on the home page for these inquiries and greater detail on the process, including who to contact with fees questions, who to contact with technical questions, approximate timeframes for completion of technical reviews of licensing actions, and quick links to SDR and NUREG 1556 series documents, and generic communications, and 10 CFR "look up." More people have told me that they tried using our web site to obtain information about licensing and could not find what they needed. So they call the region and tie up the reviewer's time.</p>	
NRC Employee	<p>I think the public oriented person would use the site location icon first to locate information regarding the plant. I saw no ties to event reports, assessment that would loop them to that information.</p>	3.1.1
NRC Employee	<p>Need to make certain key documents that should be communicated "stand out". For example, the use of news is well done and facilitates things need to see immediately. There should also be a highlight for the Strategic Plan, since that is what drives the Agency. To find the Plan as in the proposed and current web site, you have to do some searching and guess where it might be located.</p>	3.1.1
NRC Employee	<p>It would take me a while to figure out how to find the information that I generally look for from the site. For instance, Commission action items, such as SECY paper SRMs or Orders, are several not too obvious clicks away on the new site. Whereas, on the old site, one click on Commission activities would show all of the categories.</p>	
NRC Employee	<p>Persons looking for SECY papers, SRMs, transcripts, etc., do not have an obvious route from the home page. The access point seems to be Electronic Reading Room, then Document Collections. The entry in the index is Commission Documents under "C". I doubt that people familiar with these documents think of them collectively as "Commission Documents". Also, for the general public, ALL documents are "Commission Documents". SECY papers, Staff Requirements Memoranda, Meeting Transcripts, etc should be listed in the index individually in addition to the collective heading.</p>	

User	Comment	Cross Reference / Notes
NRC Employee	Why not call NUREGs, NUREGs. The title "NRC Formal Documents" is quite confusing; they could be almost anything. All documents listed in this section are NUREGs and most individuals looking for NUREGs will be looking for a heading of called NUREGs - just too confusing. Granted I like the subheadings - provides more information about the different types of NUREGs, but they all are still just NUREGs. I lost time trying to figure out where in the world the NUREGs were hiding - even though they were in plain sight. May want to rethink this one.	
NRC Employee	Docket number list should be provided in the Facilities by State area.	
NRC Employee	Information needs to have easy access. For example, I like the way the Press Releases are listed right on the home page. Why not list public meetings right on the Public Involvement page as opposed to providing yet another link?	3.1.1
NRC Employee	Documents such as NUREGS, PNs, INs, CFR, Reg Guides, forms (such as NRC form 3) need to be easy to find and locate. This information is useful to our licensees, as well as students in the field and members of the public.	
NRC Employee	The document locations for various archived HTML and records is in some ways better and some worse than the current home page. Some thought might be given to a standard or cross-reference methodology to enable the user to find things. Examples: tech papers, secy papers, aeod docs, research docs. i.e. both the old and new do not afford the user a logical sequence or index to locate less-used data. I would like to see and extra button/link to such a tool.	
NRC Employee	If someone needs a new portable gauge license, why should they have to call the region to get the documents they need when the web site can do it? Same goes for any other type of materials license that we already have good guidance for, such as in the NUREG 1556 series.	
NRC Employee	Licensees and members of the public will not be able to navigate to find documents. For instance, if you were a licensee and wanted to know how to pay your invoice where would you start. At least on the current web page with an icon for financial that would be the most obvious. But this is a virtual mine field to navigate. Go try it again as this will never get off the ground. //	

User	Comment	Cross Reference / Notes
NRC Employee	Please consider providing a dedicated link on the Home page entitled "Regional Office Locations". Currently, one must search through "who we are" to find "locations" to access the Regional Office information.	3.1.1
NRC Employee	Provide an easy index to use up front w/o wasting lot of space; Like a book. You open a book you have an index, and then you have an index for key words at the end.	
NRC Employee	The link to the reactor plant inspection results and PI results should be available from the reactor icon on the home page. This is the bottom line that a lot of people are interested in.	
NRC Employee	Generally, the site appears to be designed for licensees and/or individuals interested in regulatory activities, and not for individuals interested in the activities that NRC regulates.	
NRC Employee	The site should be about our "customers," not so much about us. I don't think that many people are as interested in NRC as an organization as they are in finding quickly what they need to do business with us so they can get on with their business.	3.6.1
NRC Employee	Put a quick link up for physicians who want to become authorized users. This may need to wait until new Part 35 is issued and effective but again, it could save us a ton of time in phone calls, especially if the information is provided in a user-friendly manner and FAQ.	
NRC Employee	I believe most users will be potential applicants or licensees. I believe they would find it very frustrating to try to get to the specific information they need in order to apply for a license. For example, it was very frustrating to find license fee information (found it only after going to many different places). I think there should be something right up front called how to get a license, and once you get to that page, it should tell you, or link to, everything you need to know--forms to submit, how to get those form, what the fees are, etc. If it is intended to put that info in the Tool Kits, I think they should be more highlighted on the first page.	3.1.1
NRC Employee	The electronic reading room is not as well organized or defined as the current site. I found it harder to figure out which documents I would like to look at as a "member of the public" than with the current version.	
NRC Employee	The current site echoes the NRC organizational viewpoint and not the cross-cutting.	

User	Comment	Cross Reference / Notes
NRC Employee	On the Human Resources Page for GG-3 to GG-15 positions. Please provide the jobs that were posted last at the top of the page. There does not seem to be any sorting or order for the Job listings	
NRC Employee	Major areas that cut across reactors, materials and waste are not addressed. These areas include, radiation protection, emergency preparedness and safeguards. These are cornerstones of the new ROP program and of high interest to the public and stakeholders. I understand that the web site is not complete, and these topics may be buried somewhere, however, they should be easily found.	
NRC Employee	Bulletins and generic letters may represent information collection requests and so must be authorized for issuance by the Office of Management and Budget. Part 21 reports also must be so authorized. These are already described on the Events and Status Reports page. Unless other kinds of documents can be included, the link Information Collections on the Document Collections page is not needed.	
NRC Employee	It is very difficult to find NUREGs. There is nothing wrong with calling them NUREGs when they are first listed. You don't find out that documents are NUREGs until you get to the last page. Can't you list Document Collections-NUREGs? This is one place where someone decided to gear the words to the general public instead of the most frequent users!	

3.5 Placement of Information

3.5.1 Placement of information on lower level pages

Recommendation: Provide easier access to information on lower level pages by placing it higher in the hierarchy rather than linking to it.

- a. Consider adding information directly to some of the lower level pages rather than linking to the information. (The issue of exactly what to add and what to link to will need to be addressed on a case-by-case-basis.)

Priority: Low

Sample user comments:

User	Comment	Cross Reference / Notes
NRC Employee	The toll-free safety hotline number and the toll-free operations center number should be featured prominently on the home page and on the page for each region.	3.1.1

3.6 Presentation of Information

3.6.1 Tone and Presentation

Recommendation: Present the site (particularly the Home page) in an easy-to-read, publicly accessible language, with a visually clear, layout. To do this, consider the following:

- a. Make the home page project a greater concern for public health and safety.
- b. Make font size more comparable across different platforms

Priority: Medium

Sample user comments:

User	Comment	Cross Reference / Notes
NRC Employee	The site should be about our "customers," not so much about us. I don't think that many people are as interested in NRC as an organization as they are in finding quickly what they need to do business with us so they can get on with their business.	3.4.1
NRC Employee	This web page is a redesign of the previous page and has the same "missing the point" flaw of the current one. It is geared toward licensees and public interest groups. Very little of it is geared toward the public and would not promote public confidence. What should hit a member of the public when they first see the page is the public health and safety function of the NRC. Citing the mission statement doesn't do it. The rest of the site deals with regulatory work with little connection to the public health and safety. It is full of techno talk and no "we care for your health and safety" message.	3.1.2
NRC Employee	When the mouse cursor is placed over a button, another small link window comes up identifying the same button the mouse is over. This normally wouldn't be a problem, but the small window covers over some of the other menu choices. I would recommend getting rid of the small pop-up windows.	
NRC Employee	There is too much information on each page.	
NRC Employee	The public meetings are shown under the date that they will be held, and then for each meeting the date is also displayed with the title of the meeting. This seems a bit off. Can you delete this second date?	Only one date is needed
NRC Employee	Strongly recommend increasing font size.	

3.6.2 Map Adjustment

Recommendation: Ensure that maps accurately reflect the information they are supposed to represent.

- a. Fix maps that are out of proportion

Priority: Medium

Sample user comments:

User	Comment	Cross Reference / Notes
NRC Employee	The maps of reactor sites must be improved.	
NRC Employee	At what-we-do/state-tribal/map-agreement-st.html, map appears squished, need to resize it	

3.7 Accessibility and Performance

3.7.1 Accessibility and Performance

Recommendation:

- a. Ensure Section 508 requirements are met.
- b. Try to improve system performance

Priority: Medium

User	Comment	Cross Reference / Notes
NRC Employee	The new site should be designed to work effectively with the smallest common denominator: The new web site should have all key information for each page displayed on the following system: 1. 56K modem; 2. 15" monitor; 3. 500 MHz CPU. David Lochbaum stated it pretty clearly, "With the redesign, most of the click icons are off the screen and the top of the screen is devoted to goofy banners and static information." These problems would become even more burdensome when working on a 15" monitor, like I do at home.	
NRC Employee	One objective should be to load as fast as possible, so delete pictures if that helps.	
NRC Employee	On 1st page, pop up text menus require mouse to be over rect. text box below the figure. The pop up should occur if the mouse is on top of the larger region which includes the associated figure also. This would make it easier to use.	3.2.1

User	Comment	Cross Reference / Notes
NRC Employee	The first screen does not fit on my screen and requires me to scroll down. What is showing may not interest me if I am a public looking at the page.	3.1.2

3.8 User Comments Not Recommended for Implementation

- a. Eliminate ALT text --
[Note that ALT text is required for Section 508 compliance as it provides the only means for users with text-only browsers to "see" graphics. While it is unfortunate that the ALT text sometimes blocks the view of the items in the drop down lists for sighted users this text must appear for each graphic item.]
- b. Provide a text-only version --
[Note that Section 508 prescribes this only as a last resort, if accessibility cannot be achieved via integration. We have no plans for a text-only version.]
- c. Use additional icons (e.g. question mark, telephones, buttons)
- d. Eliminate pictures; use bullets instead.
- e. Add more text (captions) to home page graphics to clarify content.
- f. Alphabetize items in drop-down lists
[Note that this should be considered only if there is no other meaningful method of ordering.]

Priority: n/a

Sample user comments:

User	Comment	Cross Reference / Notes
Law firm	Each link on the front view should better explain what content it contains.	
NRC Employee	The button labels on the home page say the same thing as the buttons and just cover the words in the drop down menu causing the user to have to do excessive manipulation. ... suggest getting rid of the "ALT" labels on this menu.	These first three comments conflict with Section 508 requirements and will not be implemented.
NRC Employee	When the mouse cursor is placed over a button, another small link window comes up identifying the same button the mouse is over. This normally wouldn't be a problem, but the small window covers over some of the other menu choices. I would recommend getting rid of the small pop-up windows.	
NRC Employee	The only item I noticed that annoyed me was the pop-up labels on the main page. They can cover the drop-down selection lists.	

User	Comment	Cross Reference / Notes
NRC Employee	Provide the option for a text-only version of the web site.	Section 508 prescribes this only as a last resort. We have no plans for a text-only version.
NRC Employee	Eliminate pictures. Put bullets for easy use.	Note: This analysis does not support eliminating all pictures, however, judicious use of graphics is recommended
NRC Employee	I suggest that the topics listed under each link be alphabetized to make it easier to find. Example, under the "Radioactive" link, I would list the activities as follows: Advisory Comm., HLW, LLW, Spent Fuel Storage, Spent Fuel Transportation, Waste Research.	
NRC Employee	Please alphabetize the drop-down listings. It will be a lot easier to find a program office that way.	
NRC Employee	The materials picture is difficult to interpret. Is it someone undergoing a CT scan? Maybe a caption would be good for those of us who are not that familiar with materials so that when you point the mouse to the picture or on the picture it will state what is shown.	

3.9 User Comments Arising from Possible Misunderstandings

Some of the comments seemed to address shortcomings of the prototype only. The users may not have understood that this was not meant to be a complete site despite the fact that this was explained on the Welcome page (see Appendix E). This following include these types of comments, however, most of these problems should be addressed when the site it complete:

- a. Couldn't find some kinds of documents (e.g. Commission papers, SECY papers)
- b. Provide direct access to students and teachers sections
- c. Complete the Index and Site Map.
- d. Search does not work

Sample user comments:

User	Comment	Cross Reference / Notes
NRC Employee	Under the new website design, Commission papers will have to be retrieved through ADAMS (bad idea!!!!).	

User	Comment	Cross Reference / Notes
NRC Employee	A link to the Advisory Committee on the Medical Uses of Isotopes should be placed in the index, as are the other advisory committees.	
NRC Employee	There is a significant amount of information that NRC has available, yet unless you know it exists, you will not be able to find it on the website. For example, Region III has its own website, but unless you know where to look, you will never find it.	

3.10 Issues:

Users made the following comments. It has yet to be decided if whether to accept these as recommendations or not.

- e. Use color to aid in navigation
- f. Review/revisit graphics, especially on the home page (meaning is not always clear to users).

Priority: Various

Sample user comments:

User	Comment	Cross Reference / Notes
Federal employee	I found it difficult to navigate in the sub-categories and the navigation bar seemed lacking due to the minimal degree of color variance and the size of the objects denoting current location.	
	Be consistent. Pictures say we regulate nuclear reactors, nuclear materials and radioactive waste. Text is not consistent with that.	
NRC Employee	The pictures on the home page are generic and silly. They convey nothing to people who are unfamiliar with radiation or nuclear activities. I don't think they convey anything about the NRC either.	
NRC Employee	Pages are too consistent - easy to "get lost" in that everything looks the same. For example, blue is the only color used - how about a different color for each of the strategic arenas?	
NRC Employee	The colors of blue and black are overused. The pages lack icons like question mark, telephones and buttons etc. to make the site easier to use.	

3.11 Content

The scope of this analysis does not include the detailed information content of the redesigned NRC web site prototype but focuses on its structure and presentation. This document may mention content in some places because of its impact on user satisfaction and because users requested additional content, but no detailed recommendations have been developed to address content.

4 Results and Discussion

4.1 Findings

4.1.1 Survey Data

This section provides an analysis of the responses to questions 11-17 (User Feedback Survey, Appendix A), which address a broad range of issues from current use information (frequency, type of connection) to how well they feel the prototype will help them participate in the regulatory process.

Participant Descriptions

Figure 4-1 shows the distribution of user types participating in the study. Users were grouped either as Internal NRC users or External users. The total number of users who participated in this study was 143, however, not everyone completed all of the questions, and a few provided comments by forwarded email messages. The total number of participants who answered each question appears in the caption.

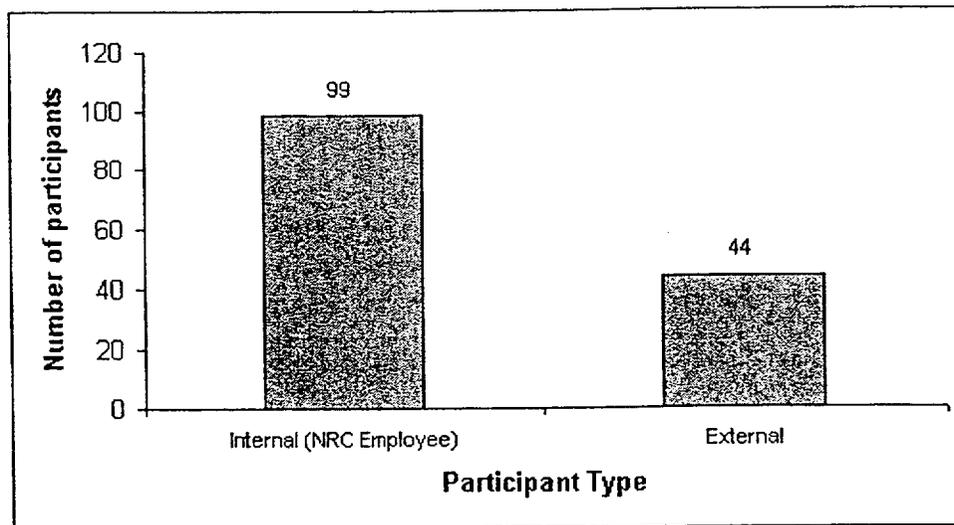


Figure 4-1. Participant Types by Code (N= 143)

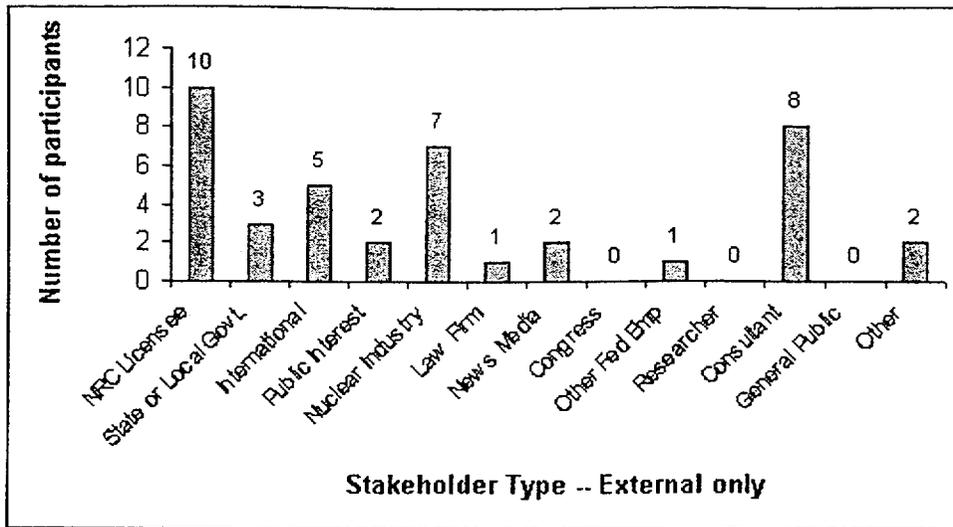


Figure 4-2 provides the breakdown of the external participants into stakeholder groups. Each participant was asked to select the stakeholder that provided the best categorization (Question 16: “Which of the following categories best describes you?”)

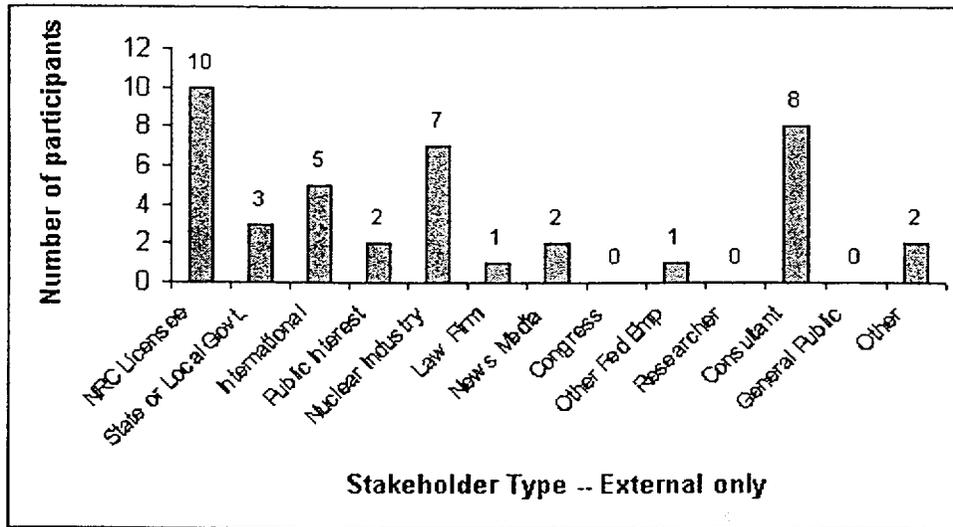


Figure 4-2. Question 16: Self-described Stakeholder Type – External participants only (N=41)

The three largest external stakeholder types are the Licensees, Nuclear Industry, and Consultant. None of the users identified themselves as Congress, Researcher, or General Public.

Figure 4-3 describes the types of connections this set of participants use to access the NRC Web site. Access by the LAN or Intranet was indicated by far the highest for both external and internal, NRC participants. ISDN/DSL/Other, was a distant second for internal NRC participants. For external participants, only 3 indicated other connection types, 1 each for Dial Up, for ISDN/DSL/Other, and for I don't know.

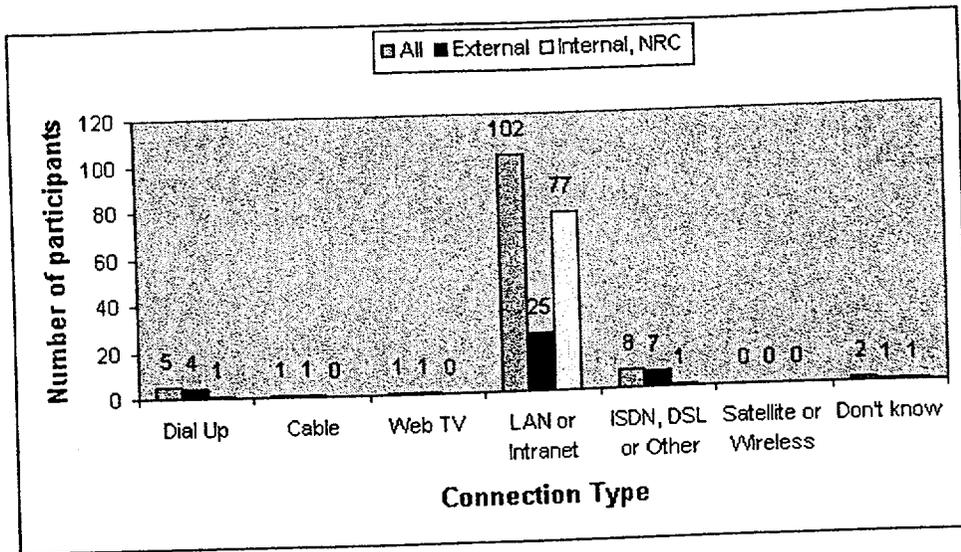


Figure 4-3. Question 15: Type of connection used to access the NRC Web site (N=119)

Figure 4-4 describes the frequency with which these users access the NRC Web site. Looking at all users combined, most of these users ($n_{\text{Daily}}=71$) access it daily, less than half that amount ($n_{\text{Weekly}}=32$) access it weekly, and only a few of the users included in this survey ($n_{\text{Monthly}} + n_{\text{Less Often}}=16$) use it less than that. This trend holds true for both the external users ($n_{\text{Daily}}=21$, $n_{\text{Weekly}}=14$ and $n_{\text{Monthly}} + n_{\text{Less Often}}=3$) and for the internal NRC users ($n_{\text{Daily}}=50$, $n_{\text{Weekly}}=18$ and $n_{\text{Monthly}} + n_{\text{Less Often}}=13$).

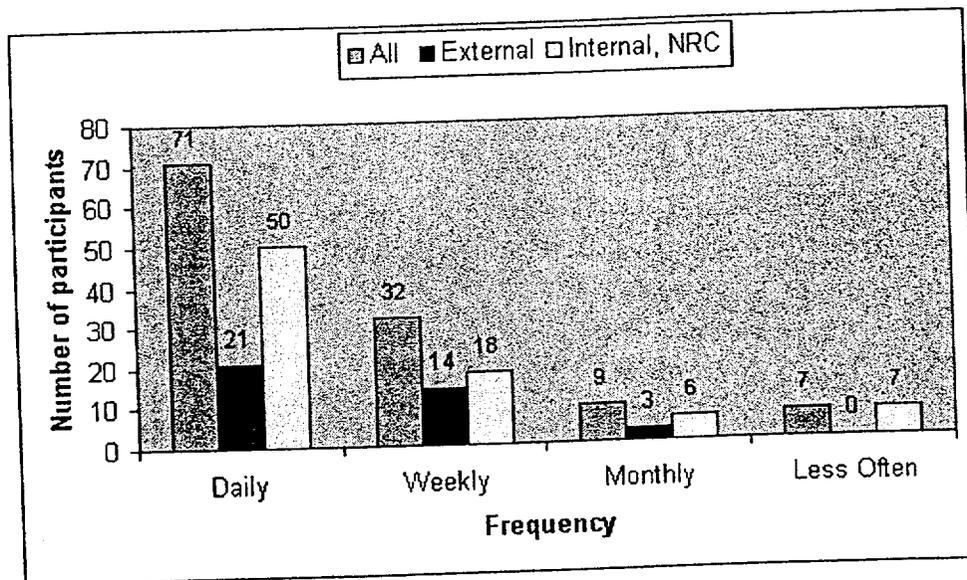


Figure 4-4. Question 17: Frequency of access of the current NRC Web site (N=119)

Perceived helpfulness of Site (Questions 11-13)

In addition to background and use questions, participants were asked to respond to three questions about how the site helps them. The responses were made on a 5-point scale that ranged

from Strongly Disagree to Strongly Agree. The responses are all broken out to show the distribution for “All” participants, “External” participants, and “Internal” NRC participants

Figure 4-5 shows the distribution of responses to the question of whether the site helps the participant to participate in the regulatory process. The majority of responses were “Neutral” indicating either that they did not have a specific answer, or that they neither agreed nor disagreed. Of the remaining participants more than twice as many answered “Agree” and “Strongly Agree” ($n_{\text{Agree}} + n_{\text{Strongly Agree}} = 45$) than the counterparts, “Disagree” and “Strongly Disagree” ($n_{\text{Disagree}} + n_{\text{Strongly Disagree}} = 22$) indicating that while the site is not overwhelmingly helpful, it is somewhat more helpful than not. Internal NRC users appear to follow the same trend. The scores for external users tend to hover around the middle ratings ($n_{\text{Disagree}} = 9$, $n_{\text{Disagree}} = 10$, and $n_{\text{Agree}} = 11$), however the extreme ratings show that those who have strong feeling tend to strongly agree ($n_{\text{Strongly Agree}} = 6$) than strongly disagree ($n_{\text{Strongly Disagree}} = 1$) with this statement.

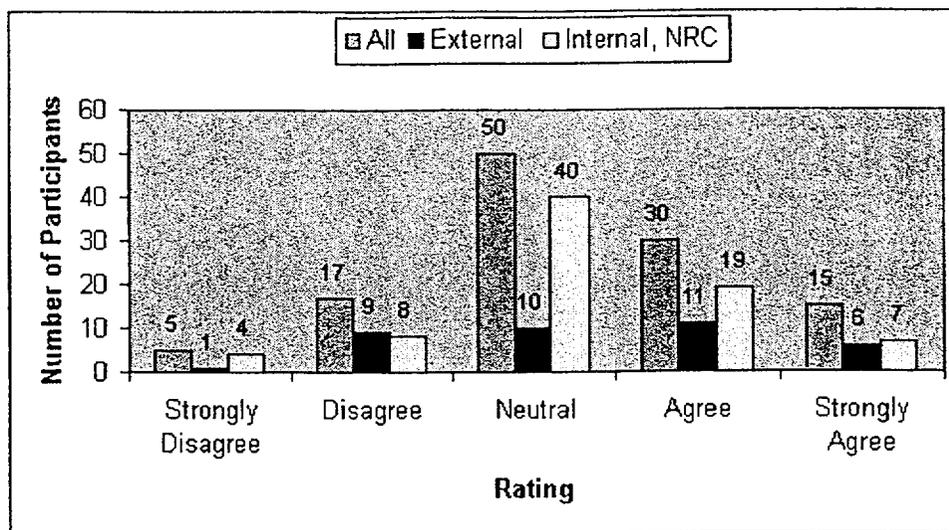


Figure 4-5. Responses to Question 11: This site helps me to participate effectively in the regulatory process (N=117)

Figure 4-6 displays the distribution of ratings for Question 12: “This site helps me understand NRC’s mission, goals, and performance”. Overall, this distribution is positively skewed showing that more than twice as many people agree and strongly agree with this statement ($n_{\text{Agree}} + n_{\text{Strongly Agree}} = 78$) than those who either have no opinion or do not ($n_{\text{Neutral}} + n_{\text{disagree}} + n_{\text{Strongly Disagree}} = 38$). This trend appears to exist for both subset of users -- the internal NRC users and the external users.

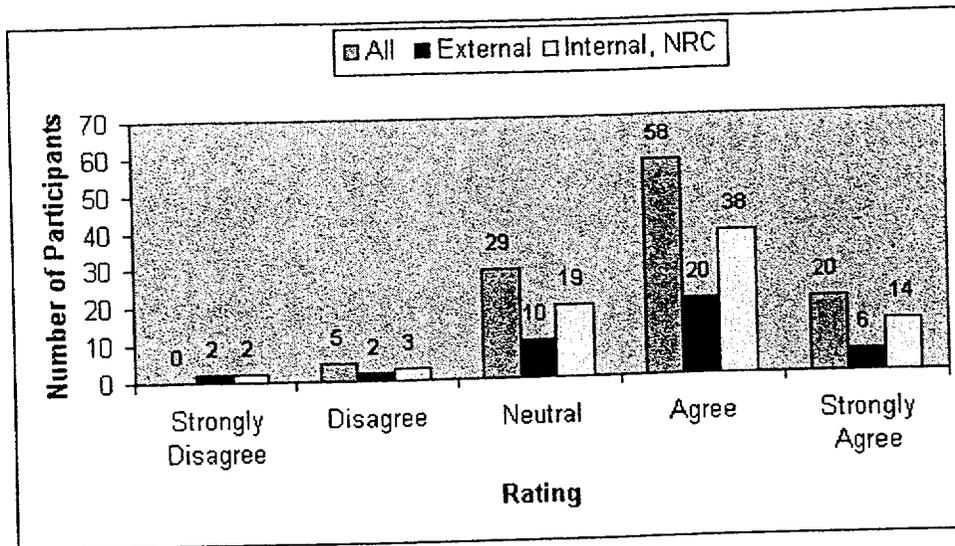


Figure 4-6. Responses to Question 12: This site helps me understand NRC's mission, goals, and performance (N=116)

Figure 4-7 describes the distribution of responses to the question about ease in finding information. A large number of participants ($n_{\text{Agree}} = 52$) agreed with this statement, however, another smaller group of users disagreed ($n_{\text{Disagree}} = 22$) with this statement. Overall though, more than twice as many people agree and strongly agree with this statement ($n_{\text{Agree}} + n_{\text{Strongly Agree}} = 77$) than those who do not ($n_{\text{disagree}} + n_{\text{Strongly Disagree}} = 33$).

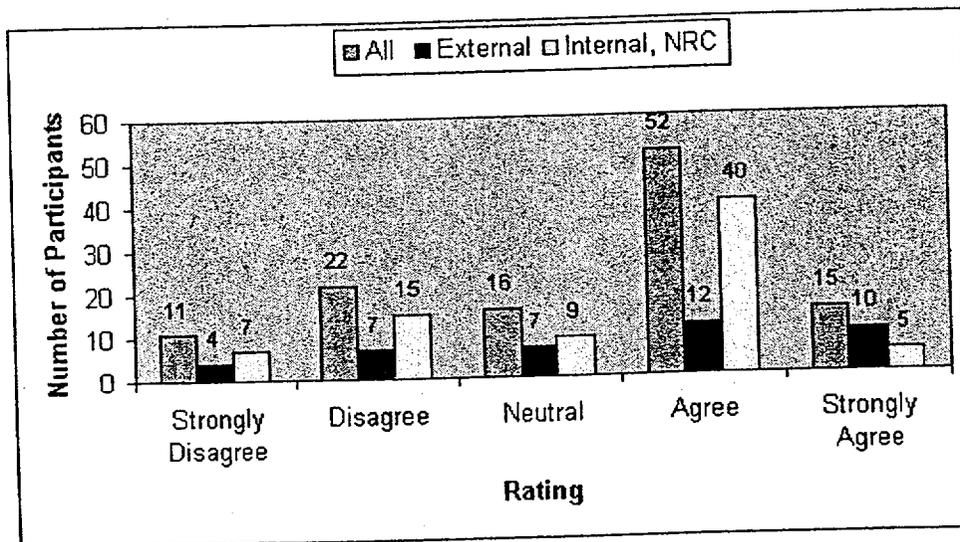


Figure 4-7. Responses to Question 13: This site makes it easy for me to find the information I'm looking for (N=116)

The distributions in Figure 4-5, Figure 4-6, and Figure 4-7 indicate that while the participants have a widely varied feeling about the how the site will help them in the regulatory process, they mostly seem to agree that the site makes NRC's missions, goals, and performance more understandable. In addition, many of the participants seem to think that the site does make it easy to find information.

Ratings of Content Areas (Question 14)

One change from the current site to the prototype was the formation of content areas, rather than having the site organized by NRC organizational areas. Figure 4-8 shows the comparative ratings for each of these content areas on a three-part scale. Participants rated each area as either “Satisfactory”, “Cannot Rate”, or “Needs Improvement”.

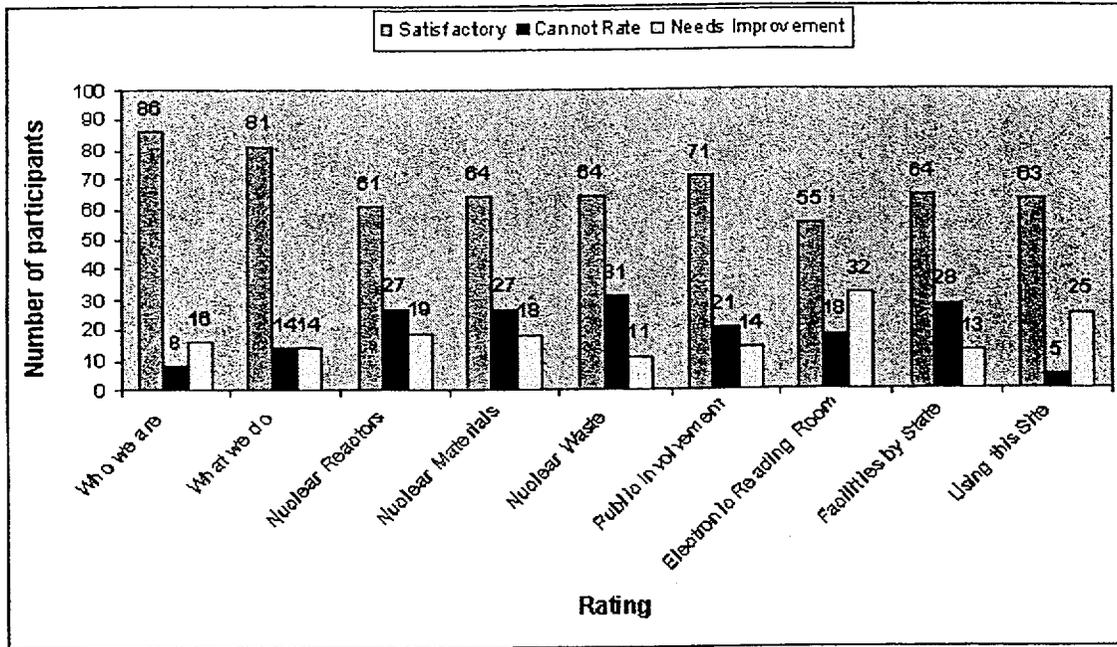


Figure 4-8. Responses to Question 14: Ratings by Content Area

All content areas received more “Satisfactory” ratings than the “Cannot Rate” or “Needs Improvement” ratings, however, none of the areas received fewer than 10 participants who gave ratings of “Needs Improvement”. One way to look at these scores is to compare the number of responses of “Satisfactory” with the number of responses for “Needs Improvement” (Note that “Cannot Rate” is essentially a null rating – neither positive nor negative). Ranking these in order from highest ratio between Satisfactory and Needs Improvement to the lowest are Who We Are (>5:1), What We Do (>5:1), Nuclear Waste (>4:1), Facilities by State (>4:1), Public Involvement (> 4:1), Nuclear Materials (> 3:1), Nuclear Reactors (> 3:1), Using this Site (>2:1), and the Electronic Reading Room (>1:1).

Satisfaction

Table 4.1-1 shows the prototype scores on SUS divided into internal NRC, external, and total.

Table 4.1-1. SUS Score by Group

Group	Number of Participants	Mean SUS Score
Internal NRC	81	69.6
External	42	70.5
All	123	70.0

Overall ratings of the prototype on SUS ranged from 20 to 100 (on a 100-point scale), with an average of 70.0 for all 123 participants who completed the SUS. Internal NRC staff participant ratings of the prototype on SUS ranged from 20 to 100 with an average of 70.5 for the 81 internal NRC staff participants who completed the SUS. External participant ratings of the prototype on SUS ranged from 22.5 to 100.0 with an average of 70.5 for the 42 external participants who completed the SUS.

All but one of these averages (for each of the groups) indicate that the participants generally accept prototype (“Acceptable” range = 60 to 80 (For more information on SUS, see Appendix B.)

As mentioned previously, there was an unexpected event that may have introduced some bias into this study (see Section 1.3.2). For that reason, the SUS scores were also evaluated Pre-Quote (based on the set of comments that were received prior to the publication of the quote) and Post-Quote (based on the set of comments that were received after to the publication of the quote). This test of statistical significance was valid in this case because this study compared the effect in three conditions, (1) pre-quote internal NRC staff users (n=68) vs. post-quote internal NRC staff users (n=13); (2) pre-quote external users (n=25) vs. post-quote external users (n=17) and (3) pre-quote all users (n=92) vs. post-quote all users (n=30). In all cases there were a sufficient number of participants to perform such a test of statistical significance. As described in Table 4.1-3 the Internal NRC scores showed the sharpest decline, dropping 16.4 points. Before the quote this group had the highest rating, but afterwards it had the lowest. Interestingly, the External users showed an increase of 5.5 points, however, that was not enough to counteract the effect on the overall total for the whole group, which showed a decrease of 5.4 points. A t-test performed the scores for each of these sets, however, does not show a significant difference in SUS scores before and after the appearance of the quote.

Table 4.1-3. SUS Score Pre- and Post- quote for each group

Group	Pre-Quote	N	Post Quote	N	Direction after quote
Internal NRC	72.2	68	55.8	13	Lower
External	68.3	25	73.8	17	Higher
All	71.4	93	66.0	30	Lower

Participant Comments

All participants had the opportunity to comment, in free text format, on the prototype. These comments appear in Appendix D (those from Internal NRC participants) and Appendix C (External participants). Additionally, certain comments, specific to a recommendation have been pulled out and restated in Section 3 –Recommendations with Comments for Improvement.

4.2 Discussion

4.2.1 General Survey Feedback

As mentioned previously, the search feedback does indicate that users do not really know whether the prototype helps them in the regulatory process – at this point they are mostly neutral. However, most do feel that it does help them understand NRC’s missions, goals, and performance. Most users seem to feel that the prototype does help them in finding information, but there is a group of users who do not feel this is so. What this indicates, in general, is that where this prototype appears to succeed, at least in terms of these three questions, is in putting forth information about “Who” NRC is and “What” NRC does. This is not surprising since according to the scores from the questions that asked the users to rate the different content areas, users seem to feel most satisfied with the “Who We Are” and the “What We Do” areas.

Where this prototype appears to have difficulties, according to this feedback, is in clearly directing all types of users to their particular destinations. There are certainly some users who are very happy with the organization and navigation, as reflected by the high scores on that question. However, there is definitely a subset of users who do not feel that the prototype made it easier to find their particular information. It may very well be some of those users are the ones who are involved directly in the regulatory process. This, then, may have affected the response to the first question about whether the prototype helps them in the regulatory process.

Finally, based on the feedback about the nine content areas, it is clear that the users feel that some areas need more work than others do. Probably the highest priority areas are the Nuclear Materials, Nuclear Reactors, Using this Site, and the Electronic Reading Room.

4.2.2 Satisfaction

The satisfaction scores showed an increase from phase I to phase III with a mean satisfaction rating of 54.2 for all participants in phase I, increasing to a mean satisfaction rating of 70.6 for all participants in phase III.

4.2.3 Limitations of the Survey and of the Study

There are several limitations to using a survey to measure the success of a prototype. The only truly quantifiable measure used in this survey was the SUS and as such is the only score that truly carries any weight. All other scores are purely indications and can give a general sense of what the users think. The comments and ratings will give feedback on what the users have to say, but they do not necessarily reflect how the users really interact with the system. To judge this, usability testing would need to be performed on representatives from the major stakeholder groups. These tests would give measures for effectiveness and efficiency, while also taking into account what the users have to say about the site.

Another consideration was the event that interrupted the flow of data collection. Refer to section 1.3.2 that discusses the unexpected event that may have introduced bias into the study. A t-test comparing the means of the pre-quote scores and the post-quote scores did not show a significant difference, indicating that the quote itself probably did not have an overall effect on the data. However, it is clear from the users' comments that some users did, individually react to the quote (some positively and some negatively).

An additional consideration, is the recognition that several users either did not read the Welcome page or they misunderstood the instructions (See Appendix E for a screen shot of this page), which stated that what they were rating was just a prototype, not a complete site. Despite the fact that the disclaimer reads as follows:

The prototype shows the structure and layout of our proposed design, as well as a significant portion of the planned content. Of course, it does not include all of the content and features that the finished Web Site will have. Note, for example, that although we have improved the scope and functions of the site search feature, it's not enabled for the prototype. In response to stakeholder input, we have added a facilities-by-state feature, although only a few representative pages are shown in the prototype. Although the index pages for document collections show the structure of the collections, the actual documents (over 50,000 pages) are not present.

Content still under development is indicated either by placeholder pages or "dummy" links with black underscores.

Respondents commented on such problems as the following:

- Inability to locate a specific document
- Inability to find information using the search function/The search didn't work properly (Note: There was a "Search Disabled" message in the search box, and the welcome message indicated that the search did not work)

- Inability to link to a particular page (even though the link was a “dummy” link – not a blue underlined link)
- Lack of information on a particular plant

Unfortunately, the fact that this is not a complete, finished site does make it difficult for some users to see beyond these problems and may result in a lower overall impression of the site. Hopefully, when these users do eventually see the finished site they will be pleasantly surprised.

Finally, it is important to realize that although many users are looking forward to a new site, there are those who may not be so eager to change over. Some users are used to the current site and to their current way of doing things. They have learned how to “get around” obstacles within the current system and may be used to dealing with any problems they encounter. Additionally, many users probably also have set up bookmarks to their favorite parts of the site. All of these affect the users’ perceptions of the prototype and should be judged accordingly.

Appendix A – User Feedback Survey

OMB Clearance No. 3150-0197: This information will be used to evaluate the prototype for the redesign of its public Web site.

NRC Prototype Web Site Customer Survey

NRC has recently developed a prototype for the redesign of its public Web site based on input from stakeholders and expert review of our existing site. You can help us evaluate the prototype by spending a few minutes exploring it and then taking a short survey. We recommend spending as much time as you can spare exploring the prototype. Completing the survey should take about 10 minutes.

[Welcome](#) | [Redesign Prototype Home Page](#)

Name (required):

E-Mail (required; format "address@organization.domain"):

User Code (required):*

*Participants: please enter the user code listed in your email.

System Usability Scale

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I think that I would like to use this system frequently.	<input type="radio"/>				
2. I found the system unnecessarily complex.	<input type="radio"/>				
3. I thought the system was easy to use.	<input type="radio"/>				
4. I think that I would need the support of a technical person to be able to use this system.	<input type="radio"/>				
5. I found the various functions in this system were well integrated.	<input type="radio"/>				
6. I thought there was too much inconsistency in this system.	<input type="radio"/>				
7. I would imagine that most people would learn to use this system very quickly.	<input type="radio"/>				
8. I found the system very cumbersome to use.	<input type="radio"/>				
9. I felt very confident using the system.	<input type="radio"/>				
10. I needed to learn a lot of things before I could get going with this system.	<input type="radio"/>				

The above questions are © Digital Equipment Corporation, 1988. Used by permission.

Additional Questions

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11. This site helps me to participate effectively in the regulatory process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. This site helps me understand NRC's mission, goals, and performance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. This site makes it easy for me to find the information I am looking for.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Please rate the quality of content (e.g. sufficiency of information and accuracy) for the following categories of the NRC Website. For those categories that need improvement, please provide further comments/suggestions in the space provided after this table.

NRC Web Site Categories	Needs Improvement	Satisfactory	Cannot Rate
Who We Are (Mission, plans, performance, organization, locations, governing legislation, history, values, contact information, employment, contracting)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What We Do (Policymaking activities, regulatory activities, state and tribal programs, international affairs, congressional affairs, and public affairs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuclear Reactors (Power reactors, non-power reactors, reactor siting, design, construction, operations, and decommissioning)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuclear Materials (Special, byproduct, and source material, medical, industrial and academic uses of nuclear material, fuel cycle facilities, source material facilities, materials transportation, and material facilities decommissioning)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Radioactive Waste (Low-level waste, high-level waste, low-level waste disposal, high-level waste disposal, and storage and transportation of spent nuclear fuel)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public Involvement (How to's and resources for participating in regulatory processes, public meetings, commenting on NRC documents, obtaining brochures and documents, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electronic Reading Room (Reference materials, NRC public documents, ADAMS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facility Info Finder (Information about individual nuclear facilities)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using This Site (Search page, site index, site map, new content, plug-ins, special features, electronic information exchange, site accessibility, privacy statement, site disclaimer, troubleshooting, feedback)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. What type of connection did you use to access the NRC Web site?

- Dial Up (telephone modem)
- Cable modem
- Web TV
- LAN or Intranet Connection
- ISDN, DSL, or other digital network
- Satellite or Wireless
- Don't know

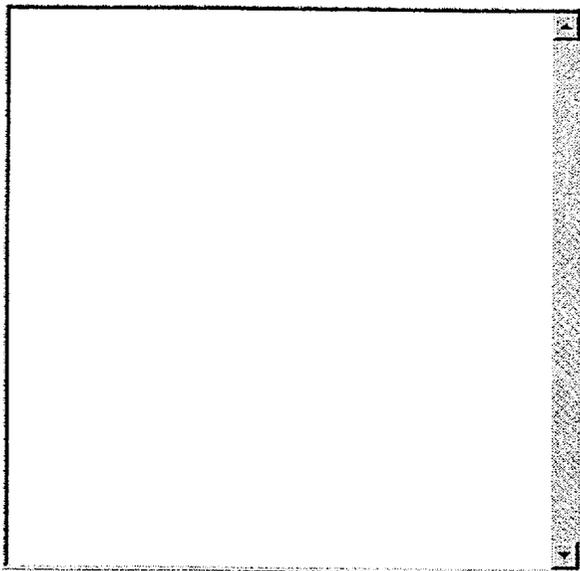
16. Which of the following categories of user best describes you?

- NRC licensee
- State or local government official
- Member of the international regulatory community
- Member of a public interest group
- NRC employee
- Nuclear industry
- Law firm
- News media
- Member of Congress or congressional staffer
- Employee of another Federal agency
- Researcher
- Consultant
- Member of the general public
- other

17. How often do you access the current NRC Web site?

- Daily
- Weekly
- Monthly
- Less often

Please provide any comments on how can we improve our site:



Appendix B – User Satisfaction Survey: System Usability Scale

SUS - A quick and dirty usability scale

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Abstract

Usability does not exist in any absolute sense; it can only be defined with reference to particular contexts. This, in turn, means that there are no absolute measures of usability, since, if the usability of an artefact is defined by the context in which that artefact is used, measures of usability must of necessity be defined by that context too. Despite this, there is a need for broad general measures which can be used to compare usability across a range of contexts. In addition, there is a need for “quick and dirty” methods to allow low cost assessments of usability in industrial systems evaluation. This chapter describes the System Usability Scale a reliable, low-cost usability scale that can be used for global assessments of systems usability.

Usability and context

Usability is not a quality that exists in any real or absolute sense. Perhaps it can be best summed up as being a general quality of the **appropriateness to a purpose** of any particular artefact. This notion is neatly summed up by Terry Pratchett in his novel “Moving Pictures”:

“ ‘Well, at least he keeps himself fit,’ said the Archchancellor nastily. ‘Not like the rest of you fellows. I went into the Uncommon Room this morning and it was full of chaps snoring!’
‘That would be the senior masters, Master,’ said the Bursar. ‘I would say they are supremely fit, myself.’
‘Fit? The Dean looks like a man who’s swallowed a bed!’
‘Ah, but Master,’ said the Bursar, smiling indulgently, ‘the word “fit”, as I understand it, means “appropriate to a purpose”, and I would say that the body of the Dean is supremely appropriate to the purpose of sitting around all day and eating big heavy meals.’ The Dean permitted himself a little smile. ” (Pratchett, 1990)

In just the same way, the usability of any tool or system has to be viewed in terms of the context in which it is used, and its appropriateness to that context. With particular reference to information systems, this view of usability is reflected in the current draft international standard ISO 9241-11 and in the European Community ESPRIT project MUSiC (Measuring Usability of Systems in Context) (e.g., Bevan, Kirakowski and Maissel, 1991). In general, it is impossible to specify the usability of a system (i.e., its fitness for purpose) without first defining who are the intended users of the system, the tasks those users will perform with it, and the characteristics of the physical, organisational and social environment in which it will be used.

Since usability is itself a moveable feast, it follows that measures of usability must themselves be dependent on the way in which usability is defined. It is possible to talk of some general classes of usability measure; ISO 9241-11 suggests that measures of usability should cover

- effectiveness (the ability of users to complete tasks using the system, and the quality of the output of those tasks),
- efficiency (the level of resource consumed in performing tasks)
- satisfaction (users' subjective reactions to using the system).

However, the precise measures to be used within each of these classes of metric can vary widely. For example, measures of effectiveness are very obviously determined by the types of task that are carried out with the system; a measure of effectiveness of a word processing system might be the number of letters written, and whether the letters produced are free of spelling mistakes. If the system supports the task of controlling an industrial process producing chemicals, on the other hand, the measures of task completion and quality are obviously going to reflect that process.

A consequence of the context-specificity of usability and measures of usability is that it is very difficult to make comparisons of usability across different systems. Comparing usability of different systems intended for different purposes is a clear case of "comparing apples and oranges" and should be avoided wherever possible. It is also difficult and potentially misleading to generalise design features and experience across systems; for example, just because a particular design feature has proved to be very useful in making one system usable does not necessarily mean that it will do so for another system with a different group of users doing different tasks in other environments.

If there is an area in which it is possible to make more generalised assessments of usability, which could bear cross-system comparison, it is the area of subjective assessments of usability. Subjective measures of usability are usually obtained through the use of questionnaires and attitude scales, and examples exist of general attitude scales which are not specific to any particular system (for example, CUSI (Kirakowski and Corbett, 1988)).

Industrial usability evaluation

The demands of evaluating usability of systems within an industrial context mean that often it is neither cost-effective nor practical to perform a full-blown context analysis and selection of suitable metrics. Often, all that is needed is a general indication of the overall level of usability of a system compared to its competitors or its predecessors. Equally, when selecting metrics, it is often desirable to have measures which do not require vast effort and expense to collect and analyse data.

These sorts of considerations were very important when, while setting up a usability engineering programme for integrated office systems engineering with Digital Equipment Co. Ltd, a need was identified for a subjective usability measure. The measure had to be capable of being administered quickly and simply, but also had to be reliable enough to be used to make comparisons of user performance changes from version to version of a software product.

The need for simplicity and speed came from the evaluation methods being used; users from customer sites would either visit a human factors laboratory, or a travelling laboratory would be set up at the customer site. The users would then work through evaluation exercises lasting between 20 minutes and an hour, at the end of which a subjective measure of system usability would be collected. As can be imagined, after this period of time, users could be very frustrated, especially if they had encountered problems, since no assistance was given. If they were then presented with a long questionnaire, containing in excess of 25 questions it was very likely that they would not complete it and there would be insufficient data to assess subjective reactions to system usability.

SUS - the System Usability Scale

In response to these requirements, a simple usability scale was developed. The System Usability Scale (SUS) is a simple, ten-item scale giving a global view of subjective assessments of usability.

SUS is a *Likert scale*. It is often assumed that a Likert scale is simply one based on forced-choice questions, where a statement is made and the respondent then indicates the degree of agreement or

disagreement with the statement on a 5 (or 7) point scale. However, the construction of a Likert scale is somewhat more subtle than this. Whilst Likert scales are presented in this form, the statements with which the respondent indicates agreement and disagreement have to be selected carefully.

The technique used for selecting items for a Likert scale is to identify examples of things which lead to extreme expressions of the attitude being captured. For instance, if one was interested in attitudes to crimes and misdemeanours, one might use serial murder and parking offences as examples of the extreme ends of the spectrum. When these examples have been selected, then a sample of respondents is asked to give ratings to these examples across a wide pool of potential questionnaire items. For instance, respondents might be asked to respond to statements such as "hanging's too good for them", or "I can imagine myself doing something like this".

Given a large pool of such statements, there will generally be some where there is a lot of agreement between respondents. In addition, some of these will be ones where the statements provoke extreme statements of agreement or disagreement among all respondents. It is these latter statements which one tries to identify for inclusion in a Likert scale, since, we would hope that, if we have selected suitable examples, there would be general agreement of extreme attitudes to them. Items where there is ambiguity are not good discriminators of attitudes. For instance, while one hopes that there would be a general, extreme disagreement that "hanging's too good" for those who perpetrate parking offences, there may well be less agreement about applying this statement to serial killers, since opinions differ widely about the ethics and efficacy of capital punishment.

SUS was constructed using this technique. A pool of 50 potential questionnaire items was assembled. Two examples of software systems were then selected (one a linguistic tool aimed at end users, the other a tool for systems programmers) on the basis of general agreement that one was "really easy to use" and one was almost impossible to use, even for highly technically skilled users. 20 people from the office systems engineering group, with occupations ranging from secretary through to systems programmer then rated both systems against all 50 potential questionnaire items on a 5 point scale ranging from "strongly agree" to "strongly disagree".

The items leading to the most extreme responses from the original pool were then selected. There were very close intercorrelations between all of the selected items (± 0.7 to ± 0.9). In addition, items were selected so that the common response to half of them was strong agreement, and to the other half, strong disagreement. This was done in order to prevent response biases caused by respondents not having to think about each statement; by alternating positive and negative items, the respondent has to read each statement and make an effort to think whether they agree or disagree with it.

The System Usability Scale is shown in the next section of this chapter. It can be seen that the selected statements actually cover a variety of aspects of system usability, such as the need for support, training, and complexity, and thus have a high level of face validity for measuring usability of a system.

System Usability Scale

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	Strongly disagree					Strongly agree
1. I think that I would like to use this system frequently	<input type="checkbox"/>					
	1	2	3	4	5	
2. I found the system unnecessarily complex	<input type="checkbox"/>					
	1	2	3	4	5	
3. I thought the system was easy to use	<input type="checkbox"/>					
	1	2	3	4	5	
4. I think that I would need the support of a technical person to be able to use this system	<input type="checkbox"/>					
	1	2	3	4	5	
5. I found the various functions in this system were well integrated	<input type="checkbox"/>					
	1	2	3	4	5	
6. I thought there was too much inconsistency in this system	<input type="checkbox"/>					
	1	2	3	4	5	
7. I would imagine that most people would learn to use this system very quickly	<input type="checkbox"/>					
	1	2	3	4	5	
8. I found the system very cumbersome to use	<input type="checkbox"/>					
	1	2	3	4	5	
9. I felt very confident using the system	<input type="checkbox"/>					
	1	2	3	4	5	
10. I needed to learn a lot of things before I could get going with this system	<input type="checkbox"/>					
	1	2	3	4	5	

Using SUS

The SU scale is generally used after the respondent has had an opportunity to use the system being evaluated, but before any debriefing or discussion takes place. Respondents should be asked to record their immediate response to each item, rather than thinking about items for a long time.

All items should be checked. If a respondent feels that they cannot respond to a particular item, they should mark the centre point of the scale.

Scoring SUS

SUS yields a single number representing a composite measure of the overall usability of the system being studied. Note that scores for individual items are not meaningful on their own.

To calculate the SUS score, first sum the score contributions from each item. Each item's score contribution will range from 0 to 4. For items 1,3,5,7, and 9 the score contribution is the scale position minus 1. For items 2,4,6,8 and 10, the contribution is 5 minus the scale position. Multiply the sum of the scores by 2.5 to obtain the overall value of SU.

SUS scores have a range of 0 to 100.

The following section gives an example of a scored SU scale.

System Usability Scale

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	Strongly disagree				Strongly agree	
1. I think that I would like to use this system frequently	1	2	3	4	5	4
2. I found the system unnecessarily complex	1	2	3	4	5	1
3. I thought the system was easy to use	1	2	3	4	5	1
4. I think that I would need the support of a technical person to be able to use this system	1	2	3	4	5	4
5. I found the various functions in this system were well integrated	1	2	3	4	5	1
6. I thought there was too much inconsistency in this system	1	2	3	4	5	2
7. I would imagine that most people would learn to use this system very quickly	1	2	3	4	5	1
8. I found the system very cumbersome to use	1	2	3	4	5	1
9. I felt very confident using the system	1	2	3	4	5	4
10. I needed to learn a lot of things before I could get going with this system	1	2	3	4	5	3

Total score = 22

SUS Score = 22 * 2.5 = 55

Conclusion

SUS has proved to be a valuable evaluation tool, being robust and reliable. It correlates well with other subjective measures of usability (eg., the general usability subscale of the SUMI inventory developed in the MUSiC project (Kirakowski, personal communication)). SUS has been made freely available for use in usability assessment, and has been used for a variety of research projects and industrial evaluations; the only prerequisite for its use is that any published report should acknowledge the source of the measure.

Acknowledgements

SUS was developed as part of the usability engineering programme in integrated office systems development at Digital Equipment Co Ltd., Reading, United Kingdom.

References

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Kirakowski, J and Corbett, M, 1988, Measuring User Satisfaction, in D M Jones and R Winder (Eds.) People and Computers IV. Cambridge: Cambridge University Press.

Pratchett, T., 1990 Moving Pictures. London: Gollancz

Appendix C – User Comments – External Respondents

Comment / User #	User Type	SUS Score	Comments	Notes
25	Nuclear Industry	87.50	Electronic Reading Room - // Is ADAM required for access to documents? // A simpler directory and search function pointing to PDF files would be useful (did not see this function in the prototype - perhaps that is what you planned when the subordinate links are activated). // Nice job overall! // JW	
36	Licensee	32.50	I need to quickly and easily access information such as Morning Reports, current FOIAs, press releases, and docket documents and NRC issuances for power reactors from both current and historical perspectives. The new website seems to place too much emphasis on public relations fluff and not enough on technical information/documents and access to it. // My need is to know what is going on in the industry (operating/regulatory experience) or alternately, to understand through the paper trail a past or present regulatory issue or event.	
37	Licensee -- Reactors	70.00	The daily NRC reports were somewhat difficult to find. This is probably the most used and should probably be more obvious. // Would be nice to have a spot for each plant from which you could access all documents pertaining to that plant rather than having to search through all the material.	
41	Radiation Safety Officer		Thanks for the opportunity to review the site. I took the liberty of forwarding it to our customer service manager who is very good at proofing things. I reviewed it as I would need information as a manufacturer of gauges and then tried to review it as our customers would see it needing to get information without some of the knowledge of the buzz words. // In general I like the look and feel it is not cluttered like too many sites. It did take longer to load some times (this is a real pet peeve of mine) but it was not too bad. Jumping back to the home page from the link at the bottom would load the top half and the a long pause (6 secs) before the bottom would load. Don't if that if a fixable item. // The pop down menus on the tabs like "What we do" etc. are nice. Are they planned for the other major areas? This would fix my only concern and that is there needs to be a clear link to the regulations and Nureg series. I could find them going to the electronic reading room but a more direct link might be better. I assumed that all of the states would have links like the three you show this is very good. I did not find phone numbers for the regional offices or an e-mail link this would help some	Content

Comment / User #	User Type	SUS Score	Comments	Notes
			users to get information or report concerns. // Now for a real wish. Probably the largest group of licenses both general and specific is our industry of fixed gauges. Links by some categories; medical, radiographers, fixed and portable gauges, exit signs and static eliminators would be helpful. This group of users and RSO's and typically over worked with other responsibilities and don't or won't spend too much time looking at sites, some links that would be nice to see for the gauge user would be links to the sealed source and device registry and if possible links to the manufacturer's sites (that is probably a legal issue). Also links to companies that will accept gauges for returns could help keep them out of the scrap yards. // Thanks again for the opportunity to comment.	
50	Public Interest	22.50	I am totally appalled by this redesign. // I implore the NRC NOT to change from its existing website format to this trash. // This redesign is much, much worse than ADAMS. // The redesigners totally missed the input from stakeholders, at least the input provided by Michael Marriotte of NIRS, Jim Riccio of Public Citizen, and me. We did not request a facility listing by state. We asked for a one-page listing of current information about each specific site. For example (and repetition to what we already said) that site listing should list upcoming public meetings involving the licensee, PNOs, DERs, inspection reports, etc. for that site, news releases about that site/licensee, etc. That's not what was provided with this redesign. // Form the existing website's News & Information page, I can access about 95% of the information I need with one or two clicks. With the redesign, that information is scattered all over the place. // With the existing website, most of the information is on the screen. In the redesign, most of the click icons are off the screen and the top of the screen is devoted to goofy banners and static information. What a waste! // Please retain the existing website and discard this redesign product. It is that bad, if not worse.	
53	Licensee – Materials	85.00	I suggest something else other than a photo of the "ivory towers" to represent the agency on the home page. While the NRC headquarters building is attractive, to many it represents government excess and the arrogance which at times characterizes the agency.	Content
55	International	65.00	No comment provided	
59	News media	65.00	As a journalist, I found news items in short supply.	
63	International	62.50	Please include also in NRC-Web Site Category the	Content

Comment / User #	User Type	SUS Score	Comments	Notes
			followings: Nuclear Industry Involvement (Initiatives, WANO, NEI, EPRI,..etc) International Involvement // (IAEA, OECD-NEA, EC, INRA, etc.) // Your Search Concept is too complicated. Please make it user-friendly. Take the example of GOOGLE Search Engine. // Full text search by words, search by dates, search by keywords, search by abbreviations, such as ACRS are enough.	
66	Consultant	40.00	I feel that this has not approved much from the previous site. I see very little improvement.	
69	International	77.50	No comment provided	
71	Consultant	65.00	Knowing what information I was looking for helped me navigate to find where it will be located. I liked the idea of bundling like information such as electronic documents together but I think the site map program could be expanded to an actual site map with a layout such as you find in an organization chart format to show further down in the site where to find the detailed information. // Chuck Gaines	
75	Nuclear Industry	75.00	Good job. I especially liked the links to the Federal Register in the Public Involvement section.	
79	International	87.50	In my opinion the site is well designed for the public, although it may need improvement in the explanation of the work of the NRC (you may consider adding examples where the public see that the work of NRC is providing added value for them). // Since I am working in a Nuclear Regulatory Body technical content is very important and therefore I would rather like technical content increased but I recognise that it could complicate the system for the public.	Content
84	Government	85.00	This site is by far the most User helpful NRC site I have seen thus far. I was impressed with the accessibility and usability of the information provided. // Great Job. // Robert Young	
85	Government	95.00	No comment provided	
92	Consultant	60.00	If it ain't broke, don't fix it. The present NRC web site is adequate and I see no need for any major modifications. The NRC should not waste its time on this effort, instead, concentrate on the real problem-ADAMS!	
96			From an email correspondence with Fran (7/20/01) -- Thanks for listening to my suggestions. Regarding the "About Radiation" link, I worked on it and managed to get some things added. HOWEVER, I strongly believe that these areas i.e radiation protection, emergency	

Comment / User #	User Type	SUS Score	Comments	Notes
			preparedness, safeguards and other that are very visible and are of great interest to the public and industry need a more visible presence (up front) rather than being buried as a sublink or whatever it is called. thanks Larry	
97	Other	95.00	<p>Overall, the prototype site is an impressive improvement over the current site. The biggest improvement is the ease of navigation. // POSITIVE NEW FEATURES OF THE PROTOTYPE SITE: // (1) With the prototype, I can tell exactly where I am in the site. // (2) The navigational aids are consistently placed on the pages and visually attractive. // (3) Typically, it takes 2 fewer "clicks" on the prototype to access the areas of the site I use most often than it does on the current site. // (4) The second-level pages are MUCH cleaner. On the average, the second-level pages on the current site have about 15 navigational links (range 3 - 35, not counting the common navigation links). The prototype pages have about 10 links (range 4 - 19). // (5) The new "drop-down" list navigational feature is very helpful. // (6) As a medical person, I can get to medical topics on the prototype in one click. I've looked on the current site for over three years and still can't find it. // (7) The prominent placement of the "Search" feature on the prototype will be very useful when implemented. // // AREAS OF POTENTIAL CONCERN (minor): // // (1) The old site was pretty much HTML, without Cascading Style Sheets (CSS) or client-side script. This makes it accessible to any browser that supports tables. The prototype uses some client-side scripting which might be problematic for very old browsers. I had no trouble at all with Netscape 4.5. // (2) Both the current site and the prototype make use of tables as the basis for page layout. The position of the W3 Consortium is that this approach is not desirable because of the difficulties it presents to visually-impaired users who employ text-to-speech conversion software as supplementary navigational aids. They recommend use of CSS for layout for this reason. Unfortunately, Web browser support for CSS is spotty, so tables will continue to be used for some time.</p>	
98	Federal	55.00	<p>The overall look and feel of the top-level of the site is pleasing despite the over-abundance of information. I found it difficult to navigate in the sub-categories and the navigation bar seemed lacking due to the minimal degree of color variance and the size of the objects denoting current location. The bread crumbs are an effective navigation aid. Other problems are related to issues of cross-platform capability. While using IE for the MAC & Windows - I experienced navigation errors (both scripting and static). A note detailing required</p>	

Comment / User #	User Type	SUS Score	Comments	Notes
			browsers for optimum performance would be appreciated. The site content seemed to be thoughtfully organized but the presentation and architecture to the site leads to some confusion - the paths to information can be down many areas (cross-relationships are plentiful). I foresee that a powerful search is necessary to find information as alot of it (information) exists in relation to NRC activities. In addition, high accessed areas of the site should be made plainly accessible at the top level - to minimize access issues. My only other concern is the performance of the site. The site contains a large number of graphic items which can make the viewing process rather excruciating for members of the public who use a modem.	
100	Licensee	92.50	No comment provided	
101	Licensee	65.00	No comment provided	
104	Consultant	75.00	I like to monitor plant status. I believe that the archiving of old Daily Status Reports will help me look backwards for trends. // The site now has a more "polished" presentation to it.	
105	Licensee -- Reactors	82.50	Add interim guidance documents to spent fuel storage information page.	
106		30.00	Your bretheren at the IRS is always "simplifying" their codes and forms. What they don't seem to appreciate is that if they kept things the same, maybe people would learn how to do it. You might think about that too.	
107	News Media	80.00	The site provides a wealth of information on many nuclear topics, but the ADAMS system is confusing and difficult to use. That portion needs to be simplified. Thanks.	
108	Nuclear Industry	90.00	Good site, with good links overall. I found it generally very user friendly. The multiple cross links and different ways to get to information was also very helpful. I did not have to continually go back to the originating page. I also like the ease of seeing what the specific link was at the top of the page. It makes further navigation easier. // One area of improvement, which is also a concern with the present site, is to make it clearer and easier to find and view SECY letters. They are frequently referenced in industry and other summaries of new initiatives and NRC positions, yet they are not located with other "Generic Communications." I find that I have to search all over to find where they have been put. Not even the search tool has been very helpful in this area. Please highlight	

Comment / User #	User Type	SUS Score	Comments	Notes
			and provide a clear, concise link to these important letters. // Thanks for the opportunity to comment. // Bob Prunty	
109	Licensee -- Reactors	97.50	The new site is great. However, for my purposes the Electronic Reading Room should be moved closer to the top. Overall this is a very good improvement and more pleasing to the eye.	
114	Nuclear Industry	22.50	Sections on "Who We Are" and "What We Do" seem to be nothing more than public relations. My interest is in quick and easy access to LERs, I&E reports, NuRegs, 10CFR50, etc. I can reach this information in 2 or 3 clicks on the existing system using "News & Information" or "Reference Library". The old format works well for those who need to work in the industry on a daily basis.	Content
115	Consultant	72.50	Take titles of news releases off the home page; news releases are NOT the major reason that NRC exists // Add icons for transportation of nuclear materials (big problem in the making) and for research // Re: High Level Waste pages: // - add a spent fuel "disposal" category // - spent fuel is NOT high level waste // - don't say spent fuel and OTHER HLW // // Re: page on Conceptual Design of Yucca Mountain Repository // - casks are not "removed" // - storage containers are not "steel" // - badly needs a technical review.	
116	Licensee	100.00	Regardless of David Lochbaum says, I like the redesign. I found the layout and functionality much better.	
119	Consultant	47.50	You have two sets of users: 1. The general public who might be interested in the big picture - the charter of the NRC and what you regulate including descriptions of reactors, spent fuel, etc. // 2. People from the industry who are looking for specific information. For instance, I want to be able to go the NRC web site and find the latest information on spent fuel storage and transportation. I don't need a description of spent fuel and I want to be able to get to my interests with minimum clicks. // Perhaps you need two web sites or at least a clear path on one web site to the different sets of information. // I did not look closely at the prototype web site, but it does not appear to provide what I need. // The current web site also has several deficiencies. One of my major complaints is the inability to find something that I know exists. The prime example is the study being done by Sandia on the safety of spent fuel casks. There is a specific web site for the study, but it should be accessible from the NRC web site.//	

Comment / User #	User Type	SUS Score	Comments	Notes
123	Other	90.00	As a student in nuclear engineering trying to find more information about the field, the new page is much more user-friendly than the old one. Good work, and I hope it goes online soon.	
130	Licensee -- Reactors	95.00	Great improvement over the current site.	
131	International	90.00	Especially I am interested in your legal documents like regulatory guides. I hope you could include also the older documents - not only the new ones - to your new web site. // Looks like you have made a decision not to include links to other sites in nuclear business? NRC has however many contacts with organizations having very informative Internet homepages (like national labs, vendors, some international and governmental organizations etc).//	Content
133	Nuclear Industry	65.00	The info I use most often appears on the current Reference Library and News & Information pages. I did not see this same info readily available on the new site. I'd prefer not to have to drill thru too many pages to get there. And, I'm not sure where it would go. I'd like to see a direct link from the home page (or have access to these features thru the PERR.) Thanks	
137	Nuclear Industry	72.50	I did not have time to review in detail each of the sub-sections, and that is why I did not answer 14. The site design appears logical for an outside user not knowledgeable of NRC. It is somewhat cumbersome for those of us who know the agency, and know what we are looking for. Today, I use the OPA page (kudos to Jan Strasma) as my internet home page and my gateway to NRC. Rarely do I go to the actual NRC "home page". I like the OPA page because of its quick access to press releases, which I see that you have put on the new home page, but more for the collection of links at the top of the page, which represent most of the places I might go that I don't already have bookmarked. Others, I get to by clicking on nuclear reactors -- which has been changed to a public tutorial in the new site. That change is understandable from the standpoint of the need to be clear to the public, but appears to be a detriment to those of us who know our way around. Everything is still there, but it is not in one place. I'm sure I could get used to it, but you know what they say about change. I might suggest what has developed by default in the past -- two gateway pages. One would be for the general public, not regularly involved with NRC-- the home page. The other would be a "frequent users" gateway -- what the OPA page has become by default. For the latter, the principal feature should be a collection of those links that those of us in	

Comment / User #	User Type	SUS Score	Comments	Notes
			<p>the business would use, which tend to be several levels down from the home page (e.g., SECY, 10CFR, Reg Guides). The collection of links on OPA is a good starting point. Finally, I question the appearance of the home page. The "arch" of images and links from lower left to upper right is attractive, but I'm working from a 19 inch monitor. I do not know whether the lower portions, which include some links the public might find useful, would appear on screen on a standard, smaller monitor. That could be a consideration. I would also put a link for ADAMS right up front, perhaps in addition to where you have it. That is your system for public access to documents. Public should not have to drill 3 deep (or more, I forgot to count) to get there.</p>	
138	Public Interest	35.00	<p>I use the site daily. There is a lot of information; however, the navigation is cumbersome. There is a lot of useless public information more appropriate for the general public than a member of a public interest group. Basically, I need to be able to research the site quickly and with precision. I need to find information about ongoing NRC activities easily, without having to mine through the site. Time wasted surfing for my information is time lost for making effective public input. With limited resources in my organization, it is essential that I can react quickly.</p>	
139	Nuclear Industry	80.00	No comment provided	
141	Licensee	67.50	<p>1) Under Fuel Cycle Fac. Regulation, Guidance and Communication, the principal parts governing the licensing should also include Part 20. // 2) The Events and Status Report selection is a great start for putting information in one place that licensees need to review on a daily basis. Suggest a link to the Federal Register's NRC section for the current day and previous days publications. Need a central link to meetings, releases, new issues and other information that we need on a daily. // 3) In the Fuel Cycle Facilities section have a link to the Region's and their activities. // 4) The ADAM's system / links / logic is not user friendly and extremely slow when trying to scroll through documents.</p>	Content
142	Law firm	57.50	<p>It is important to note that I am a daily user of the NRC website. As such, my ability to navigate the system and to adjust to how you have modified the site is quite different than the average stakeholder. Given the fact that the current site has been in place for sometime, you must provide stakeholders with some sort of template, schematic, or index that can be used to locate where in the new site you have moved links to</p>	Content

Comment / User #	User Type	SUS Score	Comments	Notes
143	Nuclear Industry	97.50	<p>I found the new NRC Web site to be a significant improvement in appearance with much better navigation tools. While it is still in development, if the links and content quality is used throughout the site, the site will provide a better view of the NRC and how it does business. // I was particularly impressed with the page 'using-this-site'. The several tools provided here will make locating information much easier. Clearly a plus for the new user as well as those that use the NRC site regularly. The posting of 'New Content' will be very useful feature. // For the 'Send Web Site Feedback', I would like to see a larger feedback box. For any comments of length (more and a very few sentences) editing or reviewing the comments become rather difficulty. // Good start on a much improved site.</p>	

Appendix D – User Comments – Internal NRC Staff Respondents

Comment / User #	SUS Score	Comments	Notes
1	72.50	The number of woman in the photographs do not reflect the true ratios and distribution at the NRC. There are some members of the male gender who still work at the NRC.	Content
2	82.50	For "eye wash" factor alone this is a great improvement. I think it looks great and from a functionality standpoint, it seems much more user friendly than the old site.	
3	95.00	Good job. Please continue to complete work-in-progress in similar fashion. Can you do the same with the internal NRC Website as well? Thanks.	
4	82.50	As an NRC employee, I really like the new design. It seems much crisper and more moden than the old button site. My one major quibble would be that the Agency Mission does not need to be paraphrased on the Home Page. It is a pretty crisp statement itself and all the aspects of the agency's mission deserve mention. I'd also provide a link to the Agency's Organizational values, and the Principles of Good Regulation. Overall an excellent effort that will increase the public' confidence and acces. //PK	
5	92.50	No comment provided	
6	75.00	No comment provided	
7	70.00	(1) Put this item at the top of your survey. Eliminate questions 1-13 and replace with straight-forward questions that can be answered yes or no. Example: Is this system difficult to use? Why? Replace 14 with a question such as: "How can we improve the Website Category pages?" Questions 15-17 should have categories such as "other", "none of the above", "all of the above." The website lacks a telephone locator. How do I get the number to call Chairman Meserve?? (2) See below for my input. // Question 15 does not allow for multiple input. I use local intranet at work, DSL at home. // The toll-free safety hotline number and the toll-free operations center number should be featured prominently on the home page and on the page for each region. // The functions of each NRC office should be defined in organizations. // All NRC documents should be available through web access. ADAMS should be scrapped before another cent is wasted on it.	Content
8	45.00	Comments: Regarding #16., I am an NRC employee and intend to use the site frequently. // Here are jsut a few observations: // 1. The maps of reactor sites must be improved, and the maps need to be linked so that they are more easily located, e.g, under the "Maps" pull-down menu. // 2. Generally, the site appears to be designed for licencees and/or individuals interested in regulatory activites, and not for individuals interested in the activities that NRC regulates. There is a difference. // It was not easy for me to find information on the site unless I already knew a lot of specifics	Content

Comment / User #	SUS Score	Comments	Notes
		<p>about the activity. For example, the site helps me identify when a public meeting on an issue will be held. However, it tells me nothing about how a nuclear reactor works, what systems or components are supposed to do, what the purpose of containment is, the health effects of radiation, or other info essential to understanding what NRC does. Why identify where BWR and PWR reactors are if we don't explain how they are different? // 3. If I recall, the EPA web site had a lot of good general information related to the environment that they seek to protect. I recommend that you review it for ideas. To be truly effective, the final NRC public web site should help the general public answer questions about activities we regulate and not just help licensees and concerned, knowledgeable citizens. // 4. To me the true test is this: Have a 18-year-old high school graduate be able to identify from the web site the types of reactors currently licensed, the types of reactors planned, the differences, the types of medical uses of nuclear material, differences in how low- and high-level radiation is handled and stored, explain how a reactor generates power, truths and misconceptions about radiation. The site should have links to reactor sites, links to agreement state sites, links to national lab sites and other sites. // The nuclear "novice" should be able to explain the issues surrounding Yucca mountain as well as the layman's interpretation of NRC inspection findings (i.e., meaning of color codes and its significance). If the material is on the page and a moderately educated // teenager can't find it, it might as well not be there. // If you have questions, please call me at 301-415-5940. // Joe //</p>	
9	65.00	<p>Thought the What we do section left out much of what is done in the field, in particular inspection related activities. // This also was somewhat the case in the nuclear reactors section. // The Headlines/News on the first page seemed to be fairly perfunctory issues for the most part. Just because a press release is issued does not mean it has to go here. // Some discretion needs to be shown so that really important things are highlighted. //</p>	Content
10	40.00	<p>The search engine is key to using the site effectively. Inasmuch as it is disabled, I can't tell you very much about the utility of this site. Most changes appear cosmetic only. // // An effective search engine (Google is the only one I know of) will search the pages themselves, and will prioritize what it finds.</p>	
11		<p>At the enforcement page, the significant enforcement action navigation line in blue sometimes doesn't work, at least for significant enforcement actions, the top link.</p>	
12	72.50	<p>Need an icon on the regulatory process..ie the licensing Board panel and the Commission.</p>	
13	80.00	<p>Comments: 1)When changing to the new site ensure that employees "old" bookmarks will be automatically transferred to any new locations. 2)Need to make ADAMS easier to use and easier to search. All documents that are to be entered into ADAMS should have an accession number assigned prior to issuance and that number clearly labeled on the NRC document. /</p>	Content

Comment / User #	SUS Score	Comments	Notes
14	55.00	The MOX Website should be listed under "KeyTopics"	
15	65.00	The button labels on the home page say the same thing as the buttons and just cover the words in the drop down menu causing the user to have to do excessive manipulation. . . suggest getting rid of the "ALT" labels on this menu. // The document locations for various archived HTML and records is in some ways better and some worse than the current home page. Some thought might be given to a standard or cross-reference methodology to enable the user to find things. Examples: tech papers, secy papers, aeod docs, research docs. i.e. both the old and new do not afford the user a logical sequence or index to locate less-used data. I would like to see an extra button/link to such a tool. // Thanks for the opportunity // Steve //	
16	100.00	You are doing a great job.	
17		Overall the new site looks very good. However, I could not find a quick tie to information or performance of a particular facility (e.g., Quad Cities Nuclear Power Station). This information is readily available on the existing web site and I think it is valuable to the public. I would expect to find this under "Nuclear Reactors" on the home page. Please make this information easier to find.	
18	75.00	1) The photo of a low-level waste facility does not represent either of the existing LLW facilities in the country. We need a picture of a shallow-land disposal facility instead of below-ground concrete vault. This is very misleading to the public. // 2) The layout for the current external website makes it easy to find Commission papers (e.g., SECY, SRM, etc.). These documents are generally of significant interest to both the staff and public. Under the new website design these documents will have to be retrieved through ADAMS (bad idea!!!!). // 3) I question the need for having all the news briefings.	Content
19	100.00	More responsive than ADAMS. More intuitive than STARFIRE.	
20	62.50	The icon for filing a safety concern is too small. It implies that whistleblower concerns are not taken serious because of the designated space allotted on the main page.	
21	47.50	Looking at it for factual information: // Need to update the fuel cycle facility information. // 1. Update the names of the facilities in the "map&list" information to be consistent with rest of the site (e.g., Allied to Honeywell). // 2. Under "Uranium Enrichment", Change the short paragraph because UF6 only goes to the Paducah GDP for enrichment, not on to Portsmouth GDP. // 3. Under "Process for New Licenses", // Reference the SRP for Part 70 for only non-MOX Part 70 licensees. // Reference the SRP for MOX only for MOX Part 70 licensees. // Looking at it for layout: // 1. Because there is too much detailed information, I see a major effort will be needed to keep it up-to-date. // 2. There is too much information on each page. // 3. Provide the option for a text-only version of the website. // 4. Great use of pictures.	Content

Comment / User #	SUS Score	Comments	Notes
22	75.00	Home page should include icon for staff's phone no. and e-mail directory. // Under "Nuclear Materials", "What We Regulate", for each regulated activity, under "Recent Enforcement Actions", add "Recent Events" (NMED-based) by category (fuel facility, medical, industrial, academic/research, other) // // Under "Facilities by State": -"non-agreement states" should clarify what NRC regulates. // -Consider including large materials licensees and a note that says that there are many other licensees like (licensee types). // -Missing Pacific Territories under Region IV. ** An Addendum (in a separate email): Under "Facilities by Region", check the accuracy of the numbers reported under "Types and Numbers of Licensees" in each region. The number of materials licensees in Regions II and III can not be identical. Some of the other numbers across the regions are questionable.	Content
23	97.50	At http://nrcweb.nrc.gov:83/what-we-do/state-tribal/map-agreement-st.html , map appears squished, need to resize it; other than that, new web site look terrific // Q: is someone test-driving new site via modem connection to test-drive speed of loading pages, etc.?? graphics don't appear to be huge so that shouldn't be a problem // well done, congrats to designers and content providers // // Bob b.// ** An addendum (sent in a separate email): OBSERVATION: in your press release (NRC to meet with ... to discuss...): you reference a meeting with 3 mile island folks to discuss findings; when you click on the link, the page indicates the correct page, but the text below it is about the Calvert Cliffs news item...	Content
24	92.50	When the mouse cursor is placed over a button, another small link window comes up identifying the same button the mouse is over. This normally wouldn't be a problem, but the small window covers over some of the other menu choices. I would recommend getting rid of the small pop-up windows. // Also, the teacher's and student's corners are buried in the page. I would make a direct link from the main page. I know as a student, I would most likely have not searched for information geared towards myself, but rather assumed it was not available.	
26	75.00	When I access the map of spent fuel storage installations, the heading at the top says that this is part of low-level waste. Spent Fuel is not low-level waste.	Content
27	75.00	I think I checked every section of both the new and old Web site, but could not locate anything telling the NRC staff or public where/how to locate documents which are available from "Distribution." Not all documents have to come from ADAMS or the PDR. There are many documents available to NRC Staff and the Public that are FREE and available from our office.	
28	77.50	The new website looks more user friendly and more similar to other websites than the previous website.// Looks good!	
29	80.00	Make sure you include the Uranium Recovery licensees in your facilities-by-state listings. // Ensure that there is a process for periodic updates/revisions by the staff that know the facts.	Content
30	67.50	No comment provided	

Comment / User #	SUS Score	Comments	Notes
31		I think that the Event and Status Report page should have a link to the historical index of the reports. They can be found (with difficulty) by doing a site search. As a resident, it is sometimes useful to review event notifications that have occurred and you have heard about, but you may not get a chance to look for them until several days after the event. By that time they are no longer easily accessible by a link; however, they are still available at the web site in a historical directory.	
32		I think this redesigned site is a disaster. I can't even find the plant information books. When in desperation I tried to put a plant name "Kewaunee" in the search box I got an HTTP error message, when I tried to search. Then I realized the search was disabled. // By the way, I hate feedback forms. I don't really think you can get much useful information by asking users to fill out a form. Hence the blank form above.	
33	75.00	I have not reviewed all the site, but here are several suggestions: // 1. In RIV's site, Missouri (Callaway) is not listed. // 2. for KIDS! - what is this? It will not function. // 3. Daily Events did not work for me. // 4. Live Commission Meetings - will this just automatically go to video streaming?? No instructions. // I really like the design of the first page. It looks great.	Content
34	62.50	I interact many times daily with materials licensees and members of the public who wish to obtain new materials licenses or amend/renew existing licenses. We should have some quick links on the home page for these inquiries and greater detail on the process, including who to contact with fees questions, who to contact with technical questions, approximate timeframes for completion of technical reviews of licensing actions, and quick links to SDDR and NUREG 1556 series documents, and generic communications, and 10 CFR "look up." More people have told me that they tried using our web site to obtain information about licensing and could not find what they needed. So they call the region and tie up the reviewer's time. It would be great if some of that burden could be shifted to the web site and make it easy to use. Lots of our licensees are not sophisticated enough to navigate around until they stumble across what they need. As for materials inspection, that area could stand some bolstering too (I'm a former inspector). For example, the home page should list a quick link for people who need to report an incident and it should give the HOO phone number as well as some regulatory references to materials reporting requirements (such as 10 CFR 30.50, Part 20.xxx, Part 21, and so on..) The current NRC form # should have a quick link from the home page also and be downloadable and printable!! And we should keep it current! This web site can do so much for us in terms of achieving our goals and making our "customers" the focus of our services and regulatory activities. The site should be about them, not so much about us. I don't think that many people are as interested in NRC as an organization as they are in finding quickly what they need to do business with us so they can get on with their business. Also, for emerging technologies, we should have a link where the latest Policy and Guidance directives are posted, such as the June 12, 2001 guide for intravascular brachytherapy, the HDR licensing guide and the transportable HDR supplement. We mail these documents out manually	Content

Comment / User #	SUS Score	Comments	Notes
		<p>now upon request, why not just put them within the users' easy reach?? It would also be a good idea to put a quick link up for physicians who want to become authorized users. This may need to wait until new Part 35 is issued and effective but again, it could save us a ton of time in phone calls, especially if the information is provided in a user-friendly manner and FAQ. In sum, I think we can redesign the web site to accomplish so much more than it currently does. I think you've made a good start but there is a long ways to go. If someone needs a new portable gauge license, why should they have to call the region to get the documents they need when the web site can do it? Same goes for any other type of materials license that we already have good guidance for, such as in the NUREG 1556 series. It might also be a good idea to have links directly to each of the Agreement States web sites and to have good sections concerning reciprocity, including 241 forms and fees information, filing requirements and Part 150 links. I would also hope that we would put alot of New Part 35 information on the site to assist licensees and stakeholders in using it and comparing it to the previous version, FAQ, training, workshops, etc. If the web site is done well enough we can make better use of the FTE we have and even save some FTE over time. That's my \$0.02. Good luck!</p>	
35		<p>Eliminate pictures. Put bullets for easy use. // - be consistent. Pictures say we regulate nuclear reactors, nuclear materials and radioactive waste. Text is not consistent with that. // - Put bullets for news or meetings. // - put bullets for job seekers, FOIA, etc.. // - people know what a meeting is. you do need graphic for that. // - Provide en easy index to use upfront w/o wasting lot of space; Like a book. you open a book you have an index, and then you have an index for key words at the end. If you want to put a picture of a nuclear plant you put where it belongs. ie, you click on nuclear reactors and you have everything you need to know there including pictures</p>	
38	80.00	<p>Please consider providing a dedicated link on the Home page entitled "Regional Office Locations". Currently, one must search through "who we are" to find "locations" to access the Regional Office information. The rest of the site is terrific. Thanks for allowing me to comment.</p>	
39	87.50	<p>The only item I noticed that annoyed me was the pop-up labels on the main page. They can cover the drop-down selection lists. // Also, on this comment page, the comment box should wrap text, rather than continue extending to the right. If there are any similar boxes on the redesigned web sight, I would suggest fixing them as well.</p>	
40		<p>The method in which the daily events and plant status reports are displayed should be improved. // I believe a member of the public coming to our site would be more interested in viewing events about the plant in his immediate area than events on any particular date. Given that, a few search tools would greatly enhance the value of the information we are providing by making it more accessible. As a minimum, I think one should be able to search by Facility Name, Date or state. More advanced searches could be added later. // Thank you.</p>	
42	100.00	<p>The site looks great. Very appealing to the eye. Great job to the</p>	

Comment / User #	SUS Score	Comments	Notes
		designer.	
43	97.50	Will there be a link to the reactor plant books presently at nrc.gov/AEOD/pib/reactors? // Will there be a link to the reactor plant's electronic version of the current UFSAR and Tech Specs? // Will all Reg Guides be available from the WEB. I believe at present only select Reg Guides are available.	Content
44	70.00	No comment provided	
45	72.50	1) I like the Home page presentation of "How We Work," "How We Regulate," etc. This layout is much better than the current Home page layout. // 2) The eagle in the logo should have white tail feathers. // 3) The BWR description content is not consistent with the PWR description content or scope. For example, the BWR description touches on emergency cooling water and pump motive power; the PWR description does not. Of the two descriptions, the PWR page seems to be more clear. The drawings of the main turbine/generator are not consistent b/w between the PWR/GCR and the BWR design descriptions, although they may be by the same vendor (e.g., GE) in all three generic plant designs. // 4) The gas cooled reactor design description includes both thermal power output and electrical power output. The distinction between these two may not be clear to the general public. Additionally, the range of power outputs for the other generic designs was not discussed.	Content
46	72.50	Could not rate the search engine since it was not enabled in the test program. // The electronic reading room is not as well organized or defined as the current site. I found it harder to figure out which documents I would like to look at as a "member of the public" than with the current version. // Overall very user friendly, but the current web site is very user friendly. I do not feel this system is a significant improvement over the current site.	
47	80.00	What we do does not contain the titles "License" and "Inspect" which is the focus of the Regional Offices. // The number of licensed facilities in each state would be a number to present, the number of NRC licenses in the Region II area is incorrect.	Content
48	77.50	Much improved from the current design with regard to ease of locating information. Not clear whether it will enhance public understanding as the site contains an enormous amount of information. // The use of the facilities by State aids in finding information about a specific site. // Need to make certain key documents that should be communicated "stand out". For example, the use of news is well done and facilitates things need to see immediately. There should also be a highlight for the Strategic Plan, since that is what drives the Agency. To find the Plan as in the proposed and current web site, you have to do some searching and guess where it might be located.	
49	40.00	The survey form is poor and will provide you no usable information. To ask if I agree or disagree in a range is always misleading. You will have no idea as to why I went to that section or what I was looking for // I thought this was a good improvement. However my sense was that	Content

Comment / User #	SUS Score	Comments	Notes
		significant information was removed. // I think the public oriented person would use the site location icon first to locate information regarding the plant. I saw no ties to event reports, assessment that would loop them to that information. // The survey or feedback needs to be collected at each page to be meaningful. Microsoft.com seems to have a way of asking if the info you just found answered your question or the reason you came to the page. // Still needs a favorites list. // I could find no quick way to ADAMS. // I only spent about 10 minutes with the trail. Perhaps not though enough for your purposes.	
51	75.00	I did a fairly quick review which is all the time I could allow. It definitely seems more user friendly and easier to stumble around and actually find what you want. I did not take the time to evaluate the content in the site. But, what I found is that when I went to a link, I saw what I expected a member of the public to be able to see and get information. I did notice in the Medical, Industrial, and Academic Rulemaking section that there was a list that included rulemaking for Part 70 and Part 40 which are not applicable to the Medical, Industrial and Academic general topic. that may just be a standard layout for all topic pages so one could easily find a rulemaking - if so, ignore the comment.	Content
52	95.00	Very nice job and the site looks great. Vast improvement! However, I would recommend adding a node/link for frequently asked questions (FAQs), by program. (But this means that this information will need to be generated.) Also, what about contacts with the staff. After reviewing this site, how does a member of the public speak to a warm body at NRC if they have a question. // Also, are there or will there be links to other (similar) nuclear regulatory organizations/bodies such as NEA, IAEA, Nagra, SSI, SKI, etc. How about a link to NEI? Lastly, with respect to the NMSS/HLW program itself, I would consider including links to the sites of certain stakeholders, like the State of Nevada and Nye County (Nevada).	Content
54	92.50	Specifically, some of the information for uranium milling is incomplete and // inaccurate. One In situ licensee: docket 04008961 Pathfinder Mines Corp. is missing. This page also needs to be improved by adding the list of Agreement State milling sites with a link to the OSTP page describing the Agreement State Program. // The terminated sites (TVA, and ARCO) should be listed separately, along with the terminated Agreement State site, Western Nuclear-Sherwood, Washington. This list will grow in the coming years as licenses are terminated. Also, there should be a separate page describing the UMTRCA Title I program and NRC's role in the review and concurrence of the remediation and general licensing of those sites. There are 22 Title I processing sites. The terminated sites from the Agreement States and current prototype page could be added into the list. That page should also provide a link to DOE's page on the UMTRA Program, since they were tasked with the cleanup of the Title I sites and are the long-term custodian for the general license sites. Overall, I give the prototype an A+++ . It's a vast improvement over our current web effort. I'm happy to see the prototype taking on more of an educational/informational flavor, rather than an elaborate gopher site (our current web page).	Content
56	92.50	Don't think improvement is needed at this time. Just wanted to let you	

Comment / User #	SUS Score	Comments	Notes
		know I enjoyed looking through the site. I think students would find it quite interesting.//	
57	90.00	No comment provided	
58	65.00	I thought that the "Headlines" portion of the page was confusing. It shows "From our Newsroom", "Daily Headlines", and "Key topics". I would eliminate the "Daily Headlines" and keep all news items under "From our Newsroom". // I thought that "Key items" was redundant to each program office. // Finally, I suggest that the topics listed under each link be alphabetized to make it easier to find. Example, under the "Radioactive" link, I would list the activities as follows: // Advisory Comm., HLW, LLW, Spent Fuel Storage, Spent Fuel Transportation, Waste Research. // What happened to the "For Kids" link?	
60	57.50	The site still does not lead one readily to Commission and Licensing Board orders in various adjudications. The accuracy of the legal content of some of the site may still require verification. I think it is confusing to list adjudicatory hearings with public meetings.//	Content
61		On the Human Resources Page for GG-3 to GG-15 positions. Please provide the jobs that were posted last at the top of the page. There does not seem to be any sorting or order for the Job listings	
62	85.00	The new web design is a substantial improvement. I'd expect that users should be able to readily find information but there may be opportunities to include more of "What's New" along with the "Key Topics" on the Home Page.	
64	77.50	I found the site to be a vast improvement over the current site, in terms of both functionality and appearance. Nonetheless, I do have one suggestion. I feel that a link to the Advisory Committee on the Medical Uses of Isotopes should be placed in the index. I realize that it is located under the "Materials" section on the Home page. However, for the sake of symmetry, I believe it should also be listed in the index, as are the other advisory committees.	
65	70.00	The first screen does not fit on my screen and requires me to scroll down. What is showing may not interest me if I am a public looking at the page. The screen appears very different from other web sites I've seen. Suggest you re-think the audience and what your message is to them. The current site tells me that Headline news are very important. The pictures tell me that buildings and technicians in those buildings are what's important. (That's what I see if I don't scroll down. // My personal view is that the site might be useful to highlight the value and benefits of regulation. To do this, you'd have to think like an outside stakeholder. // The current site echoes the NRC organizational viewpoint and not the cross-cutting. // If I were public, I'd probably be much more interested in the list of topics starting with "Report a Safety Concern". Maybe if the site gets thought of as a collection of services we provide that are beneficial and interesting. Hope this helps-- // Louise Lovell //	
67	52.50	Although the site is visually more appealing, it would take me a while to figure out how to find the information that I generally look for from the site.	

Comment / User #	SUS Score	Comments	Notes
		<p>For instance, Commission action items, such as SECY paper SRMs or Orders, are several not too obvious clicks away on the new site. Whereas, on the old site, one click on Commission activities would show all of the categories. // I was not able to figure out where on the new site the NRC directory is located. Again, on the old site, it was one click from the home page.</p>	
68	72.50	No comment provided	
70	52.50	<p>The site needs to be more transparent. There is a significant amount of information that NRC has available, yet unless you know it exists, you will not be able to find it on the website. For example, Region III has its own website, but unless you know where to look, you will never find it. Also, NRC should provide the addresses for all licensees, yet one cannot obtain the corporate address from the information provided. Finally, it appears that much of the information provided is just that -- information with no real value or use. NRC should review what it provides on the site, and make an assessment of what is really useful. If this was done, I think much of what currently resides on the site will disappear, and therefore make the site more focused.</p>	Content
72	70.00	<p>Found some dead ends that can quickly make a site very frustrating to use. Under what we do, developing guidance, the Standard Review Plan (SRP) is discussed. It states that to find the SRP for a specific area you can go to the guidance page under that area. When I went to Nuclear Reactors, Nuclear Materials, and Radioactive Waste on the Home Page I saw no such guidance page listed. Under the Nuclear Reactors page there is a link to how we regulate that if followed through to find the Nuclear Reactor SRP would likely send back through the same loop. It appears you have to know the Nureg number to access the appropriate SRP. // The layout of the site looks good. However, ease of accessing specific information is critical to its acceptance. If the desired information is hard to find, missing, or unavailable users will quickly lose confidence in the site. Since most documents were not available on the prototype I could not judge the completeness of the information.</p>	Possible dead-ends and loops
73		<p>This web page is a redesign of the previous page and has the same "missing the point" flaw of the current one. It is geared toward licensees and public interest groups. Very little of it is geared toward the public and would not promote public confidence. What should hit a member of the public when they first see the page is the public health and safety function of the NRC. Citing the mission statement doesn't do it. The rest of the site deals with regulatory work with little connection to the public health and safety. It is full of techno talk and no "we care for your health and safety" message. // A major problem with the current website is the search engine. The new website needs to have a thorough test period when the search feature is available // It is very difficult to find NUREGs. There is nothing wrong with calling them NUREGs when they are first listed. You don't find out that documents are NUREGs until you get to the last page. Can't you list Document Collections-NUREGs? This is one place where someone decided to gear the words to the general public instead of the most frequent users!</p>	Content

Comment / User #	SUS Score	Comments	Notes
74	100.00	<p>I would like to suggest adding a new link on the NRC home page named "Today at NRC" or "What's new at NRC" that opens a single page containing convenient collection of several different links to various information that already exists in the NRC system. Creation of such a single easy daily link page on the NRC home page will help the NRC staff and the public to access the needed information in a convenient way and to use the NRC home page in a much more efficient and effective manner. // Example of the suggested links on a single page that is opened by a link on the NRC home page named "Today at NRC" or "What's new at NRC": // Federal Register Notices - published on that day. // NRC daily reports - issued on that day, such as headquarter reports, event reports, and plant status reports. // Generic Communications - issued on that day, such as notices, generic letters, bulletins, NUREGs, Reg. Guides, Regulatory Issue Summaries etc. // Inspection Reports - issued on that day. // Adams - documents added that day. // Meetings - Staff and Commissioners scheduled on that day. // Daily Announcements - issued on that day. // Human Resources - information issued on that day. // Press Releases - issued on that day. // Thank you. // G. S. Shukla // Project Manager // U. S. Nuclear Regulatory Commission // Washington, D. C. 20555 // 301- 415-8439/ Fax 301-415-3061/ gss@nrc.gov</p>	
76	42.50	<p>1. The home page has way too many headlines, it is more like the OPA page than the NRC home page. It also has too much white space. // 2. The colors of blue and black are overused. The pages lack icons like question mark, telephones and buttons etc. to make the site easier to use. // 3. Consistency of the pages across the areas is great however, consistency appears to be stressed over providing the users what they want to see at a high enough page level on the site. Some eval should be done to see if there is good (not perfect) correlation between the level of a subject/office on the site vs. that subject's or offices's popularity based on hits. // 4. "What We DO" - Should have a drop down off of how we regulate otherwise a number of very important functions/offices are buried on the site. // 5. Overall I think the prototype ahs improved the consistency, look and feel at the lower levels but that was apparently accomplished at the expense of the high level pages.</p>	
77	70.00	<p>People may delete the incoming E-mail containing the "required" User Code info. before they actually test the new Web page. If you don't remind people periodically and repeat the access code info., you'll lose lots of feedback.</p>	
78	87.50	<p>Persons looking for SECY papers, SRMs, transcripts, etc., do not have an obvious route from the home page. The access point seems to be Electronic Reading Room, then Document Collections. The entry in the index is Commission Documents under "C". I doubt that people familiar with these documents think of them collectively as "Commission Documents". Also, for the general public, ALL documents are "Commission Documents". SECY papers, Staff Requirements Memoranda, Meeting Transcripts, etc should be listed in the index individually in addition to the collective heading. // I also suggest a more direct route to documents available for comment, e.g. proposed rules.</p>	

Comment / User #	SUS Score	Comments	Notes
		Some people are looking for these for information and not with the intention of commenting. // Finally, this comment box doesn't wrap the text and I've had to hit return at the end of each short line.	
80	60.00	The Reference Library appears to be less comprehensive than in the past. The document search feature, currently implemented, seems to be hidden somewhere in the many screens. The search feature in general seems not to be user friendly. Note: This comment page could also be improved. The commenter cannot see the entire comment, since it scrolls across the width of about 5 inches, but the comment line is apparently the width of the screen. Why not make the comment page the width of the screen. Also, there should be a feature for the user to save/print the input on the new web page.	
81	77.00	Expanding the Enforcement Document's "Enforcement Page" to include a drop down menu (similar to the home page drop downs) to illustrate/list the other documents on the Office of Enforcement's page. In other words, I found it difficult in locating the Enforcement Manual and Enforcement Policy Guide - documents I use almost daily. // 2. Why not call NURGEs, NUREG's. The title "NRC Formal Documents" is quite confusing; they could be almost anything. All documents listed in this section are NUREG's and most individuals looking for NUREG's will be looking for a heading of called NUREG's - just too confusing. Granted I like the subheadings - provides more information about the different types of NUREG's, but they all are still just NUREG's. I lost time trying to figure out where in the world the NUREG's were hiding - even though they were in plain sight. May want to rethink this one. // 3. How about a link to report web page problems? I saw numerous links to provide feedback, report issues, etc. but no links for reporting web page problems (i.e. missing link, etc.) I think an independent link somewhere may help to keep these issue segregated and aid in support, repairs, etc. // 4. Inspection Manual heading. Another slightly confusing section. I'm assuming both the Inspection Manual Chapters AND Inspection Procedures will be included on the site? Not sure how to cover both under one heading but the current web site does an okay job in letting chose between the inspection maunal and inspection procedures without getting too lost or too embedded - both of which I use almost daily. // 5. An easy link to the ROP Plant Assessment Overview and PI Results - used by the public and inspectors. This site is located at http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/plants.html It is an important site to illustrate reactor performance information, etc. I did not see a link. Hopefully one will be created somewhere. // And that's all I have at first glance and run through.	Content
82	35.00	I believe most users will be potential applicants or licensees. I believe they would find it very frustrating to try to get to the specific information they need in order to apply for a license. For example, it was very frustrating to find license fee information (found it only after going to many different places). I think there should be something right up front called how to get a license, and once you get to that page, it should tell you, or link to, everything you need to know--forms to submit, how to get those form, what the fees are, etc. If it is intended to put that info in the Tool	

Comment / User #	SUS Score	Comments	Notes
		Kits, I think they should be more highlighted on the first page.	
83	20.00	Licensees and members of the public will not be able to navigate to find documents. For instance, if you were a licensee and wanted to know how to pay your invoice where would you start. At least on the current web page with an ICON for financial that would be the most obvious. But this is a virtual mine field to navigate. Go try it again as this will never get off the ground. // Perhaps some user friendly buttons on the very first page. Since I understand the IG got a little ICON, why can't financial management get one	
86	85.00	No comment provided	
87		The new web site has a major flaw in its design. Major areas that cut across reactors, materials and waste are not addressed. These areas include, radiation protection, emergency preparedness and safeguards. These are cornerstones of the new ROP program and of high interest to the public and stakeholders. // I understand that the website is not complete, and these topics may be buried somewhere, however, they should be easily found. I understand that emergency preparedness may be included in incident response. This is not correct. Incident response is really something that NRC does in an emergency. Emergency Preparedness addresses what licensees do in an emergency. Thank you for the opportunity to discuss these issues. Please contact me if you want to discuss further.	Content
88		1. Suggest "formal" be removed from the title NRC Formal Publications// 2. Clearly list NUREGS // Please alphabetize the drop-down listings. It will be a lot easier to find a program office that way.	
89		The public document room link has been improved considerably! It's easier to find things now.	
90		Docket number list should be provided in the Facilities by State area.	Content ?
91		Radioactive waste photo is not waste...it's a reactor photo. For waste: use a photo of low-level radioactive waste and/or Yucca Mt High-Level Waste Disposal facility // [note: Monique confirms that the photo is correct....they are dry cask storage tanks]	Content
93	62.50	Please remove the category of Materials Licensee from the page on statistics on allegations. Stats on materials allegation will not be appearing on the web page because of the low number of concerns on a licensee basis.	Content
94	67.50	more info on fuel cycle // some of the people look like staffers // there should be more diversity in the people displayed	Content
95	100.00	would be very interesting to see what the "just for kids" content will be. Otherwise, very nice re-design. if all the links work, that will be the real test!	

Comment / User #	SUS Score	Comments	Notes
96		From an email correspondence with Fran (7/20/01) -- Thanks for listening to my suggestions. Regarding the "About Radiation" link, I worked on it and managed to get some things added . HOWEVER, I strongly believe that these areas i.e radiation protection, emergency preparedness , safeguards and other that are very visible and are of great interest to the public and industry need a more visible presence (up front) rather than being buried as a sublink or whatever it is called. thanks Larry	
99	58.30	The pictures on the home page are generic and silly. They convey nothing to people who are unfamiliar with radiation or nuclear activities. I don't think they convey anything about the NRC either. // Documents such as NUREGS, PNs, INs, CFR, Reg Guides, forms (such as NRC form 3) need to be easy to find and locate. This information is useful to our licensees, as well as students in the field and members of the public. // Information needs to have easy access. For example, I like the way the Press Releases are listed right on the home page. Why not list public meetings right on the Public Involvement page as opposed to providing yet another link? // I am sure that a lot of time and effort went into making this prototype - and I value that the NRC is trying to make its public image a favorable one. I know that I've been critical. I was a grad student before I started working at the NRC - and I remember searching and searching the NRC site for documents and information - only to give up after exhausting all of my patience. Now that I work here, I am finally beginning to locate where the pertinent documents are squirreled away on the web site. It should not be that difficult to locate information. Perhaps a new web design is just too scary for me - I am finally getting the hang of it and now it might change. Please forgive those of us who are comfortable with the current site - perhaps we have just grown attached. // Thank you for your time.	
102	82.50	No comment provided	
103	40.00	Why is our front page covered with meeting notices? Is that the best we can do? // Pages are too consistent - easy to "get lost" in that everything looks the same. For example, blue is the only color used - how about a different color for each of the strategic arenas? // Enforcement is not readily found, yet is a key component of public confidence. It took me over 1/2 hour to find the OE home page the first time. If we can put research and ACRS on the pull down boxes over reactors, materials, and waste, we can put enforcement there, too. I understand our page gets a significant number of hits currently - it should be easier for the public to find.	
110	80.00	I thought this is a very good start. I appearance is so much better than the former.	
111	75.00	Need to add email addresses to the phone book. I'm often told by people outside NRC that it's a problem to contact staff since there's no source for email addresses.	
112	32.50	Unfortunately, I have to second some of the comments of David Lochbaum, UCS. The new site should be designed to work effectively with the smallest common denominator: (by the way, this comment	

Comment / User #	SUS Score	Comments	Notes
		<p>screen is particularly annoying – you can not see the comments you are typing as they scroll off the page!) // The new web site should have all key information for each page displayed on the following system: // 1. 56K modem // 2. 15" monitor // 3. 500 MHz CPU // David Lochbaum stated it pretty clearly, "With the redesign, most of the click icons are off the screen and the top of the screen is devoted to goofy banners and static information." // These problems would become even more burdensome when working on a 15" monitor, like I do at home. // QUESTION: Is NRC "redesigning" the internal web page? I hope not. Engineers tend to think and work in very logical patterns and artsy displays can significantly affect the efficiency of "engineering-type" folks. // The general public, on the other hand, may like "goofy banners." // Please try to maximize the content/screen ratio and the click icon/screen ratio. // Sincerely submitted, // Dave Gamberoni, SECY 415-1651</p>	
113	100.00	<p>I skipped most of above Q's because I did not use system extensively. Comments follow: // 1. Takes me 2 clicks from home page to get daily events in existing system, 4 clicks in new. Not an improvement. // 2. Suggest change "Headlines: to "meetings" and provide meeting dates. These are more important than the publication date. // 3. The existing search function is frankly terrible and far less useful than such commercial sites such as google. I hope you'll improve it. // 4. Overall, the existing capabilities appear to still exist. Again, I apologize for not having the time to give the site a good workout.</p>	
117	25.00	<p>1. One should not have to scroll to get to the important part of the page. Consider putting the pictures at the bottom. // 2. The information I use the most in accessing from home is the rulemaking page and the research home page. Neither are readily available from the re-designed home page. // 3. This re-designed page is not an improvement; at best it is neutral relative to the original home page.//</p>	
118	67.50	<p>Good Job. // These changes are long over due. I think the NRC Internal WEB Page was improved significantly. The format and layout looks user friendly. I didn't see too much change in the "public page" other than the PKI (public-key infrastructure) addition of "FIRSTGOV" // I look forward to actual information loading and appearing when I click on the various NRC Home Page links, ICONS, and Search engine. // Thanks</p>	
120	72.50	<p>1. This is not really a site comment; it is about how the site content is presented. The headlines, which are very much evident read far too ominously. Most of all these on the prototype regard the annual Plant Performance Review, but the verbiage is alarming. Better would be, "NRC meets with for annual Plant Performance Review." This is accurate and doesn't raise people's hackles. // 2. Radiation Protection and Emergency Planning are no longer major topics as they are on the current site ... why? // 3. Didn't test the search feature but hope it works better than the current one. I can ask for a document I know exists ... with very specific criteria, and the search engine won't turn it. Then I have to turn to (gulp) ADAMS, which is nearly as fallable.</p>	Content
121	82.50	<p>One of the primary purposes for the web should be to provide employment information to outside individuals. I feel this category should</p>	

Comment / User #	SUS Score	Comments	Notes
		be more apparent on the home page so applicants don't have to scroll across objects to find it. Perhaps an employment icon. I've looked at several other agency web sites and they normally have something right on the home page to direct perspective employees to the employment section of the site. Other than that, I like the new look and feel. Much more eye catching and visually much nicer than what we have now.	
122	60.00	WOW!! The site is vastly improved from the current site, more modern design, gives better pictures of what we regulate - reactors, waste, but the materials picture is difficult to interpret. Is it someone undergoing a CT scan? Maybe a caption would be good for those of us who are not that familiar with materials so that when you point the mouse to the picture or on the picture it will state what is shown. // I also noticed that the public meetings are shown under the date that they will be held, and then for each meeting the date is also displayed with the title of the meeting. This seems a bit off. Can you delete this second date?	
125	75.00	No comment provided	
126		On 1st page, pop up text menus require mouse to be over rect. text box below the figure. The pop up should occur if the mouse is on top of the larger region which includes the associated figure also. This would make it easier to use.	
127		There are several references to documents on Inservice Testing in the Nuclear Reactor area of the old web site. I am having difficulty finding these documents. As the agency contact for Inservice Testing, I would like these references retained on the new web site. Thanks. Joe Colaccino 415-2753	
128	75.00	No comment provided	
129		The following comments are presented in outline form for logical understanding. The outline form is not intended to replace the organization of words indicated on the prototype. Notes to webmaster placed within square brackets should not appear on the web. // I. On page Home>What We Do>How We Regulate>Generic Communications Program A. [The 2nd and 3rd sentences on requirements imposed by generic communications are incorrect. Substitute the following for the content of this page.] // 1. The NRC issues generic communications to inform its licensees and interested stakeholders of regulatory concerns. Currently, four types of documents are used: bulletin, generic letter, information notice, and regulatory issue summary. The content of each of these types is briefly described below (see SECY 99-143 for more detail). // 2. [The NRC previously used circular and administrative letter as types of generic communications, but these types are now discontinued.] // B. The bulleted descriptions of the different generic communications need some rewriting. Use the following. // 1. Bulletin transmits information on matters of high significance to public health and safety that need urgent resolution. Because of the urgency, a bulletin is issued without public comment. A bulletin may request information from licensees. Such a bulletin will require a response from licensees pursuant to 10 CFR 50.54(f). A bulletin may request or recommend licensee	Content

Comment / User #	SUS Score	Comments	Notes
		<p>actions and announce a change in an NRC regulatory position. The NRC reviews such bulletins against 10 CFR 50.109, the backfitting rule. // 2. Generic Letter is similar to a bulletin but is used for routine technical safety matters. A generic letter will be published in the Federal Register for public comment. A generic letter typically does not invoke 10 CFR 50.54(f) unless the NRC is unable to obtain needed information otherwise. The NRC reviews generic letters requesting licensee action against 10 CFR 50.109, the backfitting rule. // 3. Regulatory Issue Summary transmits information on a variety of matters, of either technical or administrative nature. It may solicit voluntary licensee participation in NRC-sponsored programs, inform licensees of opportunities for regulatory relief, or announce changes in NRC regulatory positions. The NRC will consider soliciting public comment on these documents as appropriate. // 4. Information Notice transmits recently identified operating experience significant to public health and safety. It makes no recommendations, does not describe a change in an NRC regulatory position, and does not require a response from licensees. // II. On page Home>What We Do>How We Regulate>Events Assessment // A. [Generally a good description but needs some revisions (redline-strikeout given below)] // 1. [No change] Each licensee must send information to NRC about certain "reportable events" that occur at their facility or during their use of nuclear materials. For more information see our Event Reporting Guidelines. // 2. The reported events are reviewed at the headquarters office by a group of technical experts using plant specific risk insights and operating experience to identify significant weaknesses in plant design, operation, or equipment problems. When problem areas are identified, the headquarters office coordinates the appropriate level of inspections with the regional offices to reach a satisfactory resolution. In certain cases, if needed, these reported events are addressed through generic communications [Note to webmaster: make the words generic communications a link to the Generic Communications Program page, even though a button for that page resides on the left side of this page] to the industry, and other interested or potentially affected parties and parties. These generic communications are made available to the public through the web. // 3. The reports that address a major deficiency in design or construction, major degradation of essential safety-related equipment, or moderate release or exposure to radioactive material are forwarded to the NRC Office of Research for inclusion in the annual Report to the US cCongress on Abnormal Occurrences. // 4. The vast majority of event reports are routine and do not require activation of our incident response program. If an ongoing event poses potential risk to the public, the NRC will use its "Incident Response Procedure." For more information on how we respond to an event that could threaten public health and safety, see How We Respond to Incidents. // 5. For recent event reports, see the following: // a. [No change in description] Daily Event Reports // b. [No change in description] Licensee Event Reports (LERs) // c. [No change in description] Part 21 Reports // d. [No change in description] Nuclear Materials Events // 6. [Note to webmaster: Remove the link to Preliminary Notifications] // 7. [Note to webmaster: New paragraph] For recent NRC discussions of events, see Event and Status Reports. // III. On page Home>Electronic Reading Room>Document Collections>Event and Status Reports [Arrange as</p>	

Comment / User #	SUS Score	Comments	Notes
		follows] // A. Information licensees or vendors submit to NRC // 1. Daily Event Reports // 2. Licensee Event Reports (LERs) // 3. Part 21 Reports // 4. Nuclear Materials Events // B. NRC dissemination of information // 1. Headquarters Morning Reports - Prompt NRC dissemination of information about facilities regulated by NRC, including incidents related to these facilities [Note to webmaster: These reports are currently found under external (public) server>news and information>staff reports for the current day and external (public) server>news and information>previous reports for days before the current day.] // 2. Preliminary Notifications // 3. Plant Status Reports //IV. On page Home>Electronic Reading Room>Document Collections>Information Collections // A. [You promise that an index to Information Collection Requests will appear here when the redesigned Web site is deployed. What is meant by this title? Bulletins and generic letters may represent information collection requests and so must be authorized for issuance by the Office of Management and Budget. Part 21 reports also must be so authorized. These are already described on the Events and Status Reports page. Unless other kinds of documents can be included, the link Information Collections on the Document Collections page is not needed.]	
132		Comments: One objective should be to load as fast as possible, so delete pictures if that helps. // Strongly recommend increasing font size, and putting news releases on a following page. // ON THE FIRST PAGE: //Is there a button for the Agency Annual Performance Report ? The Mercatus Center at George Mason University gave as a poor mark last yr because the Report was not found at the NRC website and was somewhat difficult to obtain. (ML010390356) // Is there a button linking to the video-streaming schedule for Comm meetings?//	
134		The link to the reactor plant inspection results and PI results should be available from the reactor icon on the home page. This is the bottom line that a lot of people are interested in.	
135		No comment provided	
136	60.00	Please remove the pictures of the NRC employees from the web site home page. It makes the site look too much like the DOE home page (pictures of children), and we want to avoid any resemblance to DOE at all costs. In addition, the use of the pictures appears to try to make some kind of diversity statement, which is totally inappropriate for this application. The people shown are not employed at NRC in the proportions displayed on the home page. // Instead, there should be a telephone directory that ultimately leads to a separate contact page for each staff member. This can include a picture of each staff member (badge pictures), along with office, division, branch, section, telephone number, fax number, email address, project areas info, etc. By displaying the photo of each staff member, this will show the correct distribution of our diversity, rather than misrepresenting the true staff groupings.	Content
140	35.00	Couldn't you provide a chart telling us that information under XXX area on the old site is now under XXX on the new site. Where is the REFERENCE LIBRARY and NEWS & INFORMATION??? Didn't find it easily by surfing and that is the test.	

Appendix E – Welcome page



U.S. Nuclear Regulatory Commission

Contact Us  Search Plus 



Home > Welcome

Welcome to the NRC Web Site Redesign Prototype

We are redesigning our Public Web Site to improve your access to our information and make your visit at our site more enjoyable. Before we complete the redesign, we're pausing to give you, our stakeholders, an opportunity to comment on how we're doing so far. We've posted a prototype of the new site (see link below) for your review and comment. You may also wish to compare it to our current NRC Public Web Site (see link below). When you have finished your review of the prototype, please complete our online feedback form. Spend as much time as you can spare to look over the prototype before you comment.

The prototype shows the structure and layout of our proposed design, as well as a significant portion of the planned content. Of course, it does not include all of the content and features that the finished Web Site will have. Note, for example, that although we have improved the scope and functions of the site search feature, it's not enabled for the prototype. In response to stakeholder input, we have added a facilities-by-state feature, although only a few representative pages are shown in the prototype. Although the index pages for document collections show the structure of the collections, the actual documents (over 50,000 pages) are not present.

Content still under development is indicated either by placeholder pages or "dummy" links with black underscores.

You may begin your review at our [prototype home page](#). You may also wish to compare it to our current [NRC Public Web Site](#). When you have finished your review of the prototype, please complete our [online feedback form](#).

Please provide your feedback by July 31. After the 31st, the prototype and feedback forms will no longer be available.

Thank you in advance for participating in our redesign initiative.

Content updated on May 15, 2001

Appendix F – Redesigned NRC Web site prototype Home page

U.S. Nuclear Regulatory Commission

NRC



What We Regulate

Nuclear Materials

Radioactive Waste

Facility Info Finder

Public Involvement

Electronic Reading Room

Report a Safety Concern

Upcoming Public Meetings

Events and Status Reports

About Radiation

Submit a FOIA Request

Employment Opportunities

Contracting Opportunities

New Site Content

Index A-Z

Site Map

Using This Site

What We Do

Nuclear Reactors

How We Work

Who We Are

Contact Us @

The Nuclear Regulatory Commission regulates U.S. commercial nuclear power plants and nuclear materials to ensure the protection of public health and safety and the environment.

Headlines

from our [Newsroom](#)

June 22, 2001

- [06/22/01 NRC to meet with Arizona Public Service to Discuss Safety Performance at Palo Verde](#)
- [06/22/01 NRC to Meet with Nuclear Management Company to Discuss Safety Performance at the Prairie Island Nuclear Power Station](#)

June 20, 2001

- [06/20/01 NRC to Meet with Southern Nuclear Officials to Discuss Safety Performance at Hatch Nuclear Power Plant](#)
- [06/20/01 NRC to Meet with Duke Energy Officials to Discuss Safety Performance at Oconee Nuclear Power Plant](#)
- [06/20/01 NRC to Meet with Virginia Power Officials to Discuss Safety Performance at Surry Nuclear Power Plant](#)

June 19, 2001

- [06/19/01 NRC to Meet with Entergy Nuclear Generation Company to Discuss Performance at Pilgrim Nuclear Power Plant](#)
- [06/19/01 NRC to Meet with Constellation Nuclear to Discuss Performance at Calvert Cliffs Nuclear Power Plant](#)
- [06/19/01 NRC to Discuss Preliminary "White" Finding on TMI 1 Corrective Actions](#)

[More News Releases](#)

Key Topics

(The following are examples only)

- [Reactor Oversight Process](#)
- [Reactor License Renewal](#)
- [Future Reactor Licensing](#)
- [Regulatory Information Conference](#)
- [High-Level Waste Disposal](#)
- [Storage and Transportation of Spent Nuclear Fuel](#)

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