

HANFORD SITE RISK ASSESSMENT INTEGRATION STRATEGY

DOCUMENT REVIEW, COMMENT, RESOLUTION LIST

DOCUMENT TITLE: <i>Hanford Site Risk Assessment Integration Strategy (DOE/RL-2005-37, Draft A)</i>			
Item	Reference	Comment	Comment Resolution
Reviewer: John Morse/DOE			
1	Title	Change Title to "Status of Hanford Site Risk Assessment Integration".	Comment Accepted.
2	page ES-2	<p>Rewrite the exec sum:</p> <p>The U.S. Department of energy (Richland Operations Office and Office of River Protection) has established a Configuration Management Group (CMG). The CMG has been tasked with assembling the common set of information and the reasonable range of parameters and assumptions for risk assessments being conducted or planned across the Hanford Site. Technical Guidance Documents (TGDs) are to be prepared by the various projects for risk assessments that are or will be conducted in support of Hanford Site waste cleanup programs. The CMG is responsible for reviewing the parameters and assumptions proposed for each risk assessment or group of risk assessments to ensure that there is general consistency among risk assessments at the Hanford Site. In order begin the process of establishing the common set of information and reasonable range of parameters, TGDs for several projects have been prepared and reviewed by the CMG. These include the Tank Closure EIS, Composite Analysis, Single Shell Tank Performance Assessment and the Integrated Disposal Facility Performance Assessment. This initial effort was conducted between DOE (CMG) and the contractors responsible for the work. The next step to be followed by the CMG will be to work with the regulators, stakeholders and Tribes to openly discuss and further develop the common set of information and range of parameters and assumptions for risk assessments. This effort will be conducted as part of the partnering and communication program for further development of the risk integration strategy.</p> <p>The status of risk assessments presented here (and illustrated in Figure ES-1) is based on information obtained from the existing risk assessment integration technical working group with representatives from all of the major projects/programs on the Hanford Site. A workshop was held on April 19, 2005 to discuss Draft A of this document and an initial path forward identified to improve the integration of the risk assessments with a goal of achieving completeness and efficiency in conducting risk assessments to support clean up and closure of the Hanford Site. The initial path forward will involve: 1) the CMG and a smaller risk integration working group evaluating the schedules, linkages and gaps and alignment of risk assessments with closure decision requirements across the site;</p>	Comment Accepted. Portions of the Executive Summary was revised as suggested.

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		and 2) a series of workshops with Stakeholders, Tribes, National Resources Trustee Council to obtain their ideas and input and discuss the integration of site decisions, cumulative analyses and risk assessment parameters and assumptions. (make sure that the description of the CMG in section 7.0 is more or less consistent with my re-write of the executive summary)	
3	fourth bullet on page ES-1	Cumulative risk assessments -- Cumulative or composite analysis of risk means different things within different regulatory regimes and is viewed differently by different groups. The views and expectations of regulatory, stakeholder and tribal groups for cumulative risk assessments for the Hanford Site and the requirements of the different regulatory regimes (NEPA, CERCL, DOE Orders, etc.) need to be further explored and understood.	Comment Accepted.
4	page 11	Add a short paragraph (3.7) on page 11 that summarizes the results of our draft A workshop on April 19th.	
5	Section 7.0	Delete section 7.0 or just put in a summary paragraph that says pretty much what my revised page ES-2 says. The level of detail currently in 7.0 is premature.	Comment accepted. Section 7.0 was rewritten.
Reviewer: Don Steffek/NRTC			
6	Page 21	What does this sentence mean? "There does not appear to be any requirement to add together the effects from non-CERCLA sites or actions." Also, does the document referenced "Framework for Cumulative RA" (EPA 2003) only cover human health risk assessments	Comment accepted: This text was confusing and has been deleted from the report. The EPA document provides a framework for conducting cumulative risk assessments that can be applied to address human health or ecological health effects.
7	general	How will air releases be covered?	The current approach is to evaluate air releases based upon the defined area of impact. In most cases, these areas would be addressed as surface contaminated sites based upon site characterization work. This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.

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8	Appendix A	<p>Add a table in the beginning to list out the RA that is covered.</p> <p>Also, what about the RA that are not reported?</p>	<p>Comment accepted.</p> <p>Comment noted. The purpose of this report is to provide a status of the current major risk assessments that will directly support closure decisions of the Central Plateau and River Corridor that are in preparation and to define linkages between them. It also is intended to identify some of the recently completed risk assessments from which the current work is or may be tiered off of. The document serves as a catalyst to get at integration and not all risk assessments have been captured.</p>
9	Page 9	This list does not seem complete for risk assessment "completed"-	<p>Comment noted. The purpose of this report is to provide a status of the current major risk assessments that will directly support closure decisions of the Central Plateau and River Corridor that are in preparation and to define linkages between them. It also is intended to identify some of the recently completed risk assessments from which the current work is or may be tiered off of. The document serves as a catalyst to get at integration and not all risk assessments have been captured. This list will be expanded if necessary based upon additional information provided by NRTC.</p>
10	Page 11	Why is there no eco-risk for the GW?	<p>Comment noted. The scope of the ground water risk assessments is to define risks to human receptors from contacting or ingesting the ground water via a man-created pathway (wells) not through a natural pathway (seeps and springs). Human health and ecological risk from ground water is assessed at the point of natural surfacing which would include seeps, springs, and wetlands. Transition zones at these interface points for where groundwater becomes surface water is included in these latter assessments.</p>

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		Also, Why are Hanford Site-Wide Monitoring and Orphan Sites Programs listed since they are not RA scope?	Comment noted. Risk assessment principals and practices draw upon many sources. DOE believes that while the contaminated areas of the Hanford Site are well defined continued data collection and analysis of areas not suspected as being contaminated through these two programs is an integral part of the risk characterization process and it is appropriate to include these efforts as part of this status report on risk assessments.
11	General	Will the document include non-CERCLA (RCRA, MTCA) actions?	Comment accepted. (DOE/EPA/Ecology response: yes)
12	Appendix C	Will the document include overlay maps that show geographic coverage of the risk assessments? How will we see the geographic coverage of all the risk assessments? Will overlay maps be used? (This goes to the issue of air release impacts.)	Comment accepted. Appendix C has been revised to include cross-sections that show overlaps of risk assessment study boundaries. The approach to air releases is discussed in response #3.
13	Process	Will Natural Resources Damage Assessments be included in the process?	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
14	Process	What is the next step in risk assessment integration? Workshops? Gaps analysis? Records of Decision? Contractual changes?	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
15	Process	How will the issue of cumulative risks be addressed?	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
16	Process	When the risk assessments use models, how will they be verified? Will real data be used?	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
17	Process	Who (what parties) will actually integrate the risk assessments?	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
18	Process	Will there be a technical working group (including trustees) to participate in risk	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future

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		assessment integration?	on-going integration process.
19	Process	What will be the Configuration Management Group's role in risk assessments and risk assessment integration?	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
20	Process	We suspect that changes will be required in Hanford site contracts to emphasize risk assessment integration expectations	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
Reviewer: Beth Rochette/Ecology			
21	Appendix A, Risk Assessment Matrix, p. A-1.	The title of the 10th column should be changed as follows: Risk Evaluation Methods <u>and</u> Models, and Standards of Protectiveness used in Risk Evaluation. Many of the cells in this column do not have protectiveness standards. Since the document is intended to be background rather than a strategy it should not attempt to cover the regulatory requirements for risk assessments. These should instead be covered in future strategy documents.	Comment accepted.
Reviewer: John Price/Ecology			
22	Figure 2, 200 Areas	Do not believe that the logic ties from waste sites to the GW OUs are a problem. There is enough information in the SAC.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
Reviewer: Larry Goldstein/Ecology & NRTC			
23	Page 1, Background	The text should include the state Model Toxics Control Act regulations, WAC 173-340. As an ARAR it is an important tool to guide the process and final decision-making at Hanford, particularly for ecological risk assessments.	Comment Accepted.
24	Page ES-1, last paragraph, and page 10	The text states "It is not clear what constitutes a cumulative risk assessment," but on page 21 there is reference to the EPA document, Framework for Cumulative Risk Assessment. Also, there is reference to the Hanford Systems Assessment Capability (SAC) which we thought was designed to assess cumulative risk.	Comment Accepted.
25	Page ES-2, last paragraph	There is a typo in the title "Natural Resource Trustee Council."	Comment Accepted.
26	Page 15, Figure 2	This figure is very difficult to understand because it is so "busy." Perhaps it would be better to remove some extraneous information or reformat the information in a tabular format. Also, a simple list of the operable units and risk assessment completion target dates would help.	Comment Noted.

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27	Page 21, second bullet	Please clarify the sentence, "There does not appear to be any requirement to add together the effects for non-CERCLA sites or actions. What does this mean in terms of how the Hanford Site is listed on the National Priorities List?"	Comment Accepted. The sentence was deleted.
28	Page 22, second to last paragraph	The text reads, "...common sense would indicate that for a site as complex as Hanford ...some analysis would be required from a holistic perspective...." We heartily agree. Table 2 is a good start. As an oversight the 100-NR-2 ecological risk assessment is missing from the list of river corridor source units.	Comment Accepted. NR-2 was added.
29	General	In addition to listing what needs to be done to ensure comprehensive risk assessment integration the Strategy should describe <i>how</i> tasks would be accomplished. Who is responsible? How are the various contractors working together and sharing data? What is their incentive for doing so? What has changed from the status quo? We suggest these topics be addressed in the planned May 24 workshop.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
30	Page 13, Schedule Integration	It is good to see the acknowledgement that there are inconsistencies in the timing for inputs, which has been a long-standing concern of many trustees. Is there a description in the document describing how this issue will be resolved?	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
31	Page 13, Cumulative Risk Assessment	Given the limitations of the Composite Analysis because it does not currently evaluate chemical contaminants, there needs to be a commitment to take this action. The language on Page 23 in this regard is ambiguous.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
32	Page 26, Section 7.1	We recommend the CMG include technical staff from the Department of Ecology. Please contact Mr. Dib Goswami in our Richland Office at 509/372-7902.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
33	Page A-2	The text references a final CERCLA ROD in 2014 for the 100-NR-2 Operable Unit. We thought the year for final ROD's in the river corridor under the Accelerated Cleanup schedule was 2012. See also Page A-3 for 100-KR-4.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
34	Page A-6, Specific Scope Exclusions	Natural Resource Damage Assessments are excluded for the scope. This text is of great concern given the September 2004 decision by all the trustees in Lowell, Idaho. As part of the so-called "3 Point Agreement" there was agreement, "to integrate potential injury assessment data into ecological risk assessments in order to support remedial action decisions or as the collection of injury assessment data makes sense."	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.

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Reviewer: Larry Gadbois/EPA and Dennis Faulk/EPA			
35	Intro	<p>I appreciate the effort what obviously went into contacting the many risk assessors, assembling this information, and analysis of how they do or don't integrate.</p> <p>I'm a little bit stumped how to proceed with comments on this document. At the April 19th meetings in which DOE/contractors "rolled out" this document, it was described as a description of current risk assessments. Actually, DOE's exact words were "an assembly of what is being done now." BHI expressed their desire to quickly move past this document, and move on to a plan of where we should go from here. Let this stand as a starting point of what's currently being done, and proceed to develop the strategy of where do we go from here. BHI expressed an interest in accepting a small number of comments through April 28th, but the emphasis must to be on things we just couldn't live with. Especially considering this document isn't trying to plan out or solve any shortcomings in the current risk assessments.</p> <p>With that basis and background, we all agreed to that short comment period. My trouble is that by the second paragraph into the document, the description of the purpose isn't what was presented and discussed on April 19th. The purpose as printed in the document is much more than an assembly of what is being done now. The document states "The purpose of this document is to...demonstrate that the U.S. Department of Energy's (DOE's) approach to risk assessment is consistent with the <i>Hanford Federal Facility Agreement and Consent Order</i> (Tri-Party Agreement) Action Plan." Describing and assembling the current risk assessments is much different than demonstrating consistency with the TPA Action Plan.</p> <p>So the dilemma. Do I go with the document purpose as described in the April 19th workshops, and submit only a few comments and comments that can be easily incorporated, or do I go with the description in the document. Since the comment deadline we discussed on April 19 was based on the document description we discussed that day, I'll go with the April 19th plan. But consider this a general, and rather serious comment, that there is disconnect between the verbal and written story of what this document is.</p>	<p>Comment accepted. The purpose statement was revised to reflect recent agreements and the text was revised for consistency with the TPA.</p>

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36	Page 1, first word	“Closure” is a RCRA term. And DOE has used it in recent years as a general term. In a risk assessment document that covers RCRA as well as other projects, a term that doesn’t have specific meaning under RCRA would be better. Perhaps “completion of cleanup”. Consider doing a global search of the document. Sometimes closure is used as a general term and in those places an alternate term should be used.	Comment Accepted. Throughout the document, the word “clean-up” or “remediation” was added with closure when appropriate.
37	Page 1, 1 st paragraph, last sentence	Waste may be disposed on- or off-site, not just onsite.	Comment accepted. Deleted “on-site”.
38	Page 2, section 3.0, 2 nd paragraph. (And a global comment.)	The document states “The RCRA decision address...(TSD) facilities and sites that have been contaminated by unplanned releases.” Note that RCRA decisions also address sites contaminated by planned releases. Also need to add past practice sites, not just TSDs.	Comment accepted. Text revised as suggested.
39	Page 2, section 3.0, 2 nd paragraph. (And a global comment.)	The document states “The CERCLA decision address the selection of an alternative that will be implemented to remediate facilities and sites that have been contaminated by unplanned releases.” This would be better stated “The CERCLA decision select a cleanup remedy for facilities and sites that have been contaminated.” This fixes two problems. (1) CERCLA RODs “remediate” sites. CERCLA Action Memos are “removal” not remedial actions. (2) We have both unplanned and planned releases to cleanup under CERCLA.	Comment accepted. Text revised as suggested.
40	Page 3, first sentence.	The document states “The Tri-Party Agreement states...” Is this an exact quote. If so indicate it and provide a section number.	Comment accepted. Text revised with quote from Executive Summary of action plan.
41	Page 3, section 3.1, 2 nd paragraph.	The document states “In addition to storing hazardous wastes, the tank farms also store radioactive waste, which is regulated under the AEA.” To this should be added the fact that radioactive waste is also regulated under CERCLA.	This is specific to rad waste from tank farms, which is not CERCLA.
42	Page 4, section 3.2, 2 nd and 3 rd paragraphs	The 1988 and two 1989 guidance documents referenced in this document are old guidance. Newer guidance is available at: http://www.epa.gov/oswer/riskassessment/index.htm	
43	Page 13, section 6.0	This section describes the need for and scope of a sitewide risk assessment. As described in the April 19 th workshops, and the 2 nd paragraph of page 1, proposing what and how changes in the risk assessments need to be done was not identified	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.

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	and 6.1	as part of this initial document. I believe we have collectively agreed to work on a strategy to improve the risk assessment integration at Hanford. This document proposing a sitewide risk assessment is premature.	
44	General	The document makes statements that schedules need to be realigned so information can be integrated. Given that the Department has a commitment to complete all RI/FS activities by December 2008, why is realignment needed?	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
45	General	The Risk Assessment Integration Strategy section is based on a flawed assumption. The work scope defined for a CMG is outside of their domain. Under CERCLA, the regulatory agencies define the reasonable maximum exposed individual based on consultations with the affected community. The current structure of the CMG fails to recognize this.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
Reviewer: Dib Goswami/Ecology			
46	Intro, 2nd par	The purpose of the document is to explain the scope and requirements of risk assessments. I think this too broad. A number of the risk assessments are still trying to define their exact scope and the requirements (e.g. Tank closure, several ER- related risk assessments, etc,) especially on the sitewide/cumulative assessments.	Comment accepted. The text was revised to "summarize" the risk assessments.
47	Cumulative Impact Assessments	<ol style="list-style-type: none"> 1. Define the various definition (NEPA, CERCLA and other-e.g... SAC/other in the text. 2. It seems there are some other cumulative risk assessments already identified that are not listed in the document. Also list the others that have been completed (e.g. solid waste EIS, Sac, etc.) 3. Clearly define what drives the Performance assessments and how the information is linked to related site specific/sitewide risk assessments if possible 4. Provide a summary what's expected in the future. Can we put some of our "straw man" ideas? 	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
Reviewer: Stan Sobczyk/Nez Pierce			
48		Risk assessments (including performance assessments) conducted for tank farm activities must be integrated into the groundwater risk assessments on the Central Plateau (200-BP-5, 200-PO-1, 200-UP-1 and 200-ZP-1). Figure 2, Table 2 and Appendix A need to be changed to reflect the impact of past, present and future tank farm activities on groundwater. We appreciate that Figure ES-1 and Figure 4 (<i>Hanford Site Risk Assessment Integration Strategy</i>) <u>do</u> illustrate a conceptual connection of tank waste with groundwater.)	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.

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49	Table 2	The bias of Table 2 is that <u>all</u> groundwater contamination is from past practice disposal of liquid wastes and not tank farm activities. This bias needs to be removed from the table. The Field Investigation Reports (FIRs) for the single-shell tank farm waste management areas should provide site-specific contaminant distributions to enable "history matching" as required for the waste sites. The interface of the FIRs with the Composite Analysis needs to be described. The Composite Analysis should supply estimates of groundwater concentrations from tank sources to the river corridor.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
50		The affects of lateral spreading should be incorporated into all vadose zone modeling.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
51	Appendix A	<p>The following changes should be incorporated into Appendix A:</p> <ol style="list-style-type: none"> 1. On page A-11, the statement that the 200-BP-5 groundwater OU "may dry out" should be removed. 2. The groundwater OUs on the Central Plateau need to be linked to the tank farm risk assessments and performance assessments and waste site risk assessments. 3. 200-TW-2 waste sites should be addressed. 4. B-BX-BY FIR time evaluation was only 1,000 years not the stated 10,000 years (page A-19). 5. FIRs are independent documents of one another and should not be linked. <ol style="list-style-type: none"> a. The Preliminary Performance Assessment for WMA C should not be linked to the B-BX-BY FIR and the S-SX FIR. b. The Risk Assessment for WMA S-SX Closure Plan should not be linked to the B-BX-BY FIR. 6. The tank leaks that are not investigated in the FIRs need to listed. For example, the B-BX-BY FIR did not investigate the documented leaks from tanks B-201, B-203, B-204, B-101, B-103, B-105, B-107, B-111, B-112, BX-108, BX-110, BX-111, BY-103, BY-105, BY-106, BY-107 and BY-108. 7. How do you expect to determine ecological risk and endpoints if we still lack water quality criteria for the protection of freshwater organisms, such as for uranium (specifically as relates to the 300 Area)? 	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.

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		8. Why were no tribal scenarios evaluated for groundwater OUs 300-FF-5, 100-FR-3, and 100-BC-5?	
52	page ES-2	On page ES-2, the word "National" should be changed to "Natural" in the last sentence.	Comment accepted.
53		Since the risk assessments/performance assessments are key planning components of the Hanford cleanup, the parameters input into the risk assessments/performance assessments must adhere to strict scientific principles and be subjected to rigorous external peer review. Thus, the master data file, technical guidance documents and technical requirement documents must all be thoroughly prepared and reviewed in an open forum. To ensure technical independence and an unbiased outcome, the CMG should include Tribal technical staff, regulators, and technical staff from the Oregon Department of Energy.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
Reviewer: Mary Baker/NRTC			
54	General	<p>Thanks very much for letting us review this draft, and for including me in the risk integration strategy working group. This document should be re-titled, since it does not provide the final strategy for integrating risk assessments at Hanford (it is only the first step). I would suggest adding a sub-title: "Hanford Site Risk Assessment Integration Strategy: Preliminary Issue Evaluation".</p> <p>The use of the term "conceptual integrated risk assessment model" (for example, in the Executive Summary, page ES-1) overstates this document's achievements on how the assessments align. The document identifies key risk assessment efforts for the Hanford site and describes key features of each and how they might relate to each other. I do not believe you have created a unified conceptual risk assessment model.. This is not to say the document is not useful, it will be a great tool for improving risk evaluations at the site.</p>	<p>Comment accepted. The title will be revised.</p> <p>Comment noted.</p>
55	General	Throughout the document, terms are used that are not clear to the lay audience (for example applying "controls". These terms should be avoided or defined.	Comment accepted. Section 7.0 revised and terminology "controls" was removed.
56	strategy figure (ES-1 and figure 4)	In the strategy figure (ES-1 and figure 4) and appendix 1 tables, a feedback loop is needed between the risk assessments. The assessments are presented linearly, with the outputs all feeding into the composite analysis or cumulative risk assessments. There should be two-directional links between groundwater and river assessments (for example, river assessments should provide feedback for groundwater evaluations to identify concentrations in groundwater seeps that are	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.

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		acceptable).	
57	General	The term "composite analysis" seems to be used in two ways in this document. In some places, it refers to a generic cumulative or site wide evaluation of the effect of all contaminants on all receptors (for example, on pages 2 and 8 and in table 2). In other places, it seems to just refer to a cumulative assessment of radiological contaminants on humans (pages 5 and 7). This causes great confusion since the document seems to be advocating for a broader assessment.	Composite analysis is specific to the cumulative assessment of radiological contaminants. This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
58	Page ES-2, first paragraph, last sentence	I would clarify that the purpose of the effort is to make sure that the data and evaluations support decision-making, that assessments are comprehensive, cumulative, and efficient.	Comment accepted. Text was added at the end of the executive summary that defines these as objectives of the process. Also, this comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
59	Page 1, second paragraph	I would suggest changing the phrase "and demonstrate that the DOE's approach is consistent..." to "and ensure that the DOE's approach is consistent..." It would not be appropriate to pre-judge that the current approach is correct. Also, in the last sentence, I would change the last phrase to "and provides a preliminary strategy for integrating risk assessments" since this document is only a tool in helping integrate the assessments (more work to integrate the assessments will follow).	Comment accepted. Text revised as suggested.
60	Page 2, first paragraph	Please define the term "composite analysis" as used here (see general comment).	Composite analysis is described in Section 3.4. This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
61	Page 7, first paragraph	It is not clear how DOE headquarters will evaluate tank farm and tank waste performance assessments, what information will be evaluated, and whether this evaluation considers the need to integrate with other assessments.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
62	Page 7, third paragraph	I assume that the composite analysis mentioned here is only for human exposure?	Correct.
63	Page 8	Composite analysis here is used in a different context than on page 7.	The scope and intent of the composite analysis and the cumulative analysis will be further defined

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			through the process. This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
64	Page 9, second bullet	Exposure points in the Columbia river include sediment and surface water.	Comment accepted. Text revised to clarify this point.
65	Figure 1	The boxes on the left of the figure should include sediment and surface water in addition to soil and the vadose zone. The Central Plateau drivers should include CERCLA. Clarify the use of the term composite analysis in the top boxes.	
66	Page 10, section 3.6, first bullet	The last phrase is not clear (when is it appropriate for the assessment to be conducted), does this mean over what time frame or what risk should be assessed?	Comment accepted. Text revised to clarify this point.
67	Page 21, first bullet	Clarify that DOE o 435.1 requires composite analysis for human exposure only (unless my understanding is incorrect).	Comment accepted. Text revised as suggested.
68	Page 21, second bullet	This description of cumulative risk under CERCLA seems to be referring to humans. Cumulative risk is also a driver within CERCLA for ecological receptors. Further, though not explicit, I believe there is the requirement to address risk from all CERCLA releases (whether they originate from a site or action or from elsewhere).	Comment accepted. Text revised to clarify this point.
69	Page 22, first partial bullet	Is there a need to address cumulative risk from Sr-90?	The information presented is stating what was evaluated. Parameters to be considered have not been established. This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
70	Table 2	Clarify that the risk assessments need input and provide output to other risk assessment efforts, in addition to the composite analysis effort. For example, river corridor risk assessments need to provide input/feedback to the groundwater operable units to ensure that groundwater treatment provides acceptable risk reduction at the point of discharge to the river.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
71	Page 26, section 7.1	Add the trustee representative to the working group(or clarify that this was recommended after the January workshop).	Comment accepted. Text and figure was revised.

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	and figure 3		
72	Page 27, section 7.3	Please explain the term "configuration control" for the lay audience.	Comment accepted. The text was deleted.
73	Page 29, section 7.4	I would change the title of this section to "implement preliminary integrated risk assessment strategy" to clarify that these are only the first steps.	Comment accepted. The text was deleted.
74	Page 31, section 7.4	I would suggest adding bullets that clarify that the integration strategy includes conducting a broader composite analysis and an effort to document site-wide risk conclusions through a cumulative risk analysis (as shown in figure 1). If these steps are not intended, they should be removed from the figure.	Comment accepted. The text was deleted.
75	Appendix A	<p>Though I did not have time to provide detailed comments on the table in appendix A, I have provided a few specific comments, and a note should be made that this table will continue to be refined as part of the integration strategy to identify specific links between the assessments and with the composite analysis.</p> <p>I am concerned through reading the appendix that it appears that the purpose of the Columbia River Component of the Columbia River Baseline Risk Assessment appears to be to find other sources of Hanford contaminants and provide comparative risk evaluations to support "no-action" decisions at the site.</p> <p>Appendix A: Some of the decision support information presented here is too vague (for example, project 9 has no obvious decision it supports). All the groundwater assessments that can influence the river should mention that input from river corridor and specific shoreline area assessments are needed. These feedback loops will ensure that groundwater cleanup will result in concentrations that are protective of river and shoreline natural resources. These would include projects 1, 2, 4, 5, 6, 7, 18, and 19 (project 8 already seems to have a feedback loop to 100 area groundwater assessments). Other assessments of tank farms and central plateau soil contamination areas should consider their impact on groundwater that will discharge to the river, but don't seem to need a direct feedback loop. Does project 2 need an input from the 200 area groundwater assessments? Project 3 should provide output to the other Columbia River assessments (100/300 and River corridor). Project 8 should receive input from 200 area groundwater analyses. Does Project 14 (composite analysis) only apply</p>	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.

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		to radionuclides and human health? Please clarify the relationship between this effort and other mentions of composite analysis. Project 15 (Cumulative analysis) has a very vague decision statement. The ecological impact method statement is not clear. Is there another document that describes this in more detail?	
Reviewer: Paul Shaffer/Oregon			
76		As discussed at the April 19 meeting, the draft document represents a status report rather than a strategic plan. Although it was disappointing not to have a true "strategy" to review, the status report represents a critical first step in the integration process. It provides for the first time a list and description of the many assessment activities ongoing at Hanford, and provides a first look at the relationships of these studies in time, space, and scope. Oregon also appreciates that DOE recognizes the need for a comprehensive, holistic assessment of the Hanford site, and recognizes the complexity of doing what will likely be an unprecedented assessment effort in terms of scope and spatial scale	Comment noted.
77		The draft document suggests a heavy reliance on models for assessing and projecting long-term ecological conditions at Hanford. Specifically, the draft document suggests reliance on the Systems Assessment Capability (SAC) model; Oregon has consistently expressed concerns about the reliability of the SAC model, particularly with regard to conceptual shortcomings of the model (e.g., for predicting flow and transport in the vadose zone). We also have concern that because the SAC model was not developed for ecological assessment, it may be difficult to adapt it as a tool for ecological risk assessment. We are also concerned that long-term model forecasts will of necessity be based on relatively short-term data sets and are concerned about the reliability of such forecasts. While use of models is essential for the assessment process, we believe that there should be a minimal dependence on their use, and a maximal effort to collect and use environmental data. We also believe that as part of the assessment process, DOE needs to articulate explicit criteria explaining how monitoring data will be interpreted to support or reject model projections, and how DOE will respond if model forecasts are invalidated by monitoring data.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
78	Section 6.1	Section 6.1 identifies a number of "regulatory drivers" for sitewide risk assessment. The Natural Damage Resources Assessment provisions of CERCLA, and Washington's Model Toxics Control Act (MTCA) are applicable drivers and should be added to this list.	Comment accepted. MTCA was added. ^{WAC} NRDA is already covered by citing CERCLA.

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79	Appendix A & C	As discussed at the April 19 meeting, we are concerned that the areas defined by assessment projects in Appendix A, and in maps in Appendix C may not include all on-site areas that have been adversely impacted by Hanford activities. Examples of areas that may not be included for consideration: (1) 618-10 and 618-11 (noted only in terms of groundwater); (2) P10 facilities and 100 C areas (excluded from 100 B/C pilot); (3) P11 plutonium criticality lab; (4) 213 J/K plutonium storage vaults; (5) old Hanford range and patrol areas NE of Gable Mountain; (6) old Hanford airport, Hanford Patrol area; (7) storage quonset huts west of 200W; and (8) possibly the 200 N areas, Gable Mtn. Pond, 200 B/C cribs.	This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
80	Section 7.4	Section 7.4 provides a list of valuable recommendations to help guide and improve risk assessment. We suggest that these be noted for consideration by the technical working group planning the May 24, 2005 workshop, and that as appropriate they be added to the agenda for the May workshop.	Comment noted.
81		In the document, a variety of terms are used to describe integrated assessment activities under different statutory authorities. These include terms such as cumulative assessment, performance assessment, and composite analysis, in addition to integrated risk assessment. It would be very helpful to have a short section in the report to compare and contrast these activities - how and why they are done, what information is included in each, and how are they are similar (and different) from one another? Table 2 provides insight to this issue, but it would be helpful to provide a conceptual statement of how these analyses relate to one another.	This document presents a summary of assessments and as noted some relationship information in Table 2. Specifically defining the relationships should be a part of the process. This comment will be added to the list of Topics of Interest and will be addressed as a part of the future on-going integration process.
82	Figure 2	Figure 2 could be modified to improve legibility. The overlay of small print on a gray or green background made parts of the figure difficult to read.	Comment noted.
83	Appendix A	There are a number of holes in some of the entries in Appendix A. The utility of the tables will be increased when these can be filled in.	Comment noted.
84	General	There are inconsistencies in describing the number of assessments at Hanford, as discussed at the April meeting. You seem to be converging on 48 or 51; it would be helpful to have a single number we all can refer to.	Comment accepted. This will has be resolved in the Rev. 0 of this document..
85	General	Questions from the April 19 th meeting: 1. Will NRDA be incorporated in the integrated assessment? When	These comments will be added to the list of Topics of Interest and will be addressed as a part of the

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		<p>and how? By doing a bit more work now, time and money will be saved in the long term.</p> <ol style="list-style-type: none"> 2. What are DOE's planned next steps, in getting from what is mostly a status document to a strategy and a plan for doing integrated assessment? Will there be workshops, gap analysis, changes in milestones or RODs? 3. How will cumulative risks and effects be addressed? What about comments (e.g., on pp 21-22 of the draft document that seem to limit the scope of DOE's assessment? 4. How will models be verified? How much data does DOE plan to collect to verify projections? What criteria will be used to verify/reject model projections? 5. What is the scope of geographic coverage? Maps in Appendix C don't seem to cover the whole site. What about areas not mentioned in the document? What about integrating vertical layers (air, surface, vadose zone, groundwater)? How will site-wide monitoring (which is noted as being outside the risk assessment scope on p C-13) fit into risk assessment? 6. Page 2 says there are 51 assessments; is there a short list of these assessments and what is being done for each? Does Appendix A of the document (48 projects) represent that list? 7. Will the holes in Appendix A be filled in? 8. Who will be responsible for doing and managing integrated risk assessment? DOE? TPA? Contractors? 9. Section 4 suggests that groundwater endpoints are not related to human health issues; is that a correct interpretation of the text? 10. Section 7.1 indicates the CMG will be responsible for integration. Who is on the CMG? 11. Section 7.1 also indicates that DOE has established a technical working group that will interact with the CMG to plan and implement integrated assessment. Trustees believe this group should be broader than DOE, with representatives of trustees and outside groups. 	<p>future on-going integration process.</p>

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		<p>12. What is the nature of the risk assessment integration strategy document? Is it a formal review document? (Calling this "Draft A" seems to be inconsistent with most such documents from Hanford (review drafts are typically "Revision 0") so is it something else?) What is the timeline for comments?</p> <p>13. The new contract for the river corridor seems to balkanize the river area in terms of spatial responsibilities and processes for different contractors. This seems to complicate integration.</p> <p>14. What is the status of contract funding for ecological characterization in the 300 area?</p>	

Definition of Responses:

Comment Accepted. Requires additional discussion only if necessary, depending on the specific comment.

Comment Accepted with Modification. You generally concur with the comment but there might be a slight modification in the actual changes from what was requested. Additional discussion is required to clarify the modification being incorporated.

Additional Discussion Required. Identify the specific items that require additional discussion and why. Propose a resolution where appropriate.

Comment Noted. Brief text explaining why we do not agree or why the comment should not be specifically incorporated as stated. Indicate if text changes are made at end of discussion.