LAND MID-CYCLE REVIEW SUBCOMMITTEE

Conference Call Summary
Friday, April 18, 2008
11:00 a.m. – 1:00 p.m. EDT

Welcome

Dr. Charlie Menzie, Exponent, Inc., Subcommittee Chair

Dr. Charlie Menzie, Chair of the Land Mid-Cycle Review Subcommittee, welcomed the Subcommittee members to the conference call and asked the members and EPA participants to introduce themselves.

Administrative Procedures

Ms. Heather Drumm, U.S. Environmental Protection Agency (EPA)/Office of Research and Development (ORD), Subcommittee Designated Federal Officer (DFO)

Ms. Heather Drumm reviewed the Federal Advisory Committee Act (FACA) procedures that are required for all Board of Scientific Counselors (BOSC) Subcommittee meetings. As the Subcommittee DFO, Ms. Drumm serves as the liaison between the Subcommittee and EPA and ensures that all meetings comply with FACA guidelines. All meetings and conference calls on substantive issues—whether in person, by phone, or by e-mail—that include at least one-half of the Subcommittee must be open to the public. A *Federal Register* notice must announce meetings 15 calendar days in advance, and the DFO and Subcommittee Chair must approve the meeting agenda and attend all meetings. A contractor is recording the minutes of this call and will prepare a summary for posting on the BOSC Web Site; the minutes must be certified by the Chair within 90 days of the meeting.

The BOSC is a federal advisory committee that provides independent scientific peer review and advice to EPA's ORD. The Land Mid-Cycle Review Subcommittee was established by the BOSC Executive Committee to review the progress of the Land Research Program since the last full program review in 2005. The Subcommittee has been asked to respond to charge questions and provide a report for the Executive Committee's deliberations. The Executive Committee has the authority to evaluate the Subcommittee's report, revise it as necessary, and submit it to ORD. The role of the BOSC is to provide advice and recommendations to ORD. The rights of decision-making and program implementation remain with the Agency.

Subcommittee members are required to complete homework sheets on which they should note all time spent reading documents and preparing written materials either prior to or following any of the Subcommittee meetings. Time spent at meetings should not be included because those hours are recorded by the DFO. In addition, Subcommittee members have filed financial disclosure forms for review by EPA officials and have completed the required ethics training. Ms. Drumm asked that she be notified immediately should any potential conflicts of interest arise during the teleconference.

This is the first teleconference of the Subcommittee; a second teleconference is scheduled for April 24, 2008. The face-to-face meeting will be held on May 8, 2008, in Pensacola, Florida.

The Subcommittee members should have received materials relevant to this discussion via an e-mail on April 16, 2008. Although no requests for public comment were received prior to the call, the agenda allows time for public comment at 12:35 p.m.; each comment must be limited to 3 minutes.

Material Overview

Dr. Randy Wentsel, EPA/ORD, National Program Director (NPD) for Land

Dr. Randy Wentsel provided an overview of the materials the Subcommittee members had received in their notebooks, including: (1) the draft charge, which includes a third charge question that addresses the shift in focus of Long-Term Goal (LTG) 2 to emerging issues and seeks advice about how to make the new focus more coordinated with the LTG's purpose; (2) the updated Multi-Year Plan (MYP), which was completed in July 2007; (3) EPA's response to the 2005 BOSC program review (completed in May 2006); (4) a document detailing how the Program has responded to the 2005 comments to date; (5) a document highlighting the accomplishments of the Program, including information about a new Web site designed to communicate the Program's mission, accomplishments, and points of contact; (6) surveys; (7) program performance measures and goals; (8) Office of Management and Budget (OMB) Program Assessment Rating Tool (PART) process and performance metrics; (9) Annual Performance Goals (APGs) as they relate to the LTGs; (10) a Superfund report on four major sites at which the Program provided input (background document); (11) the Land Strategic Directions Science Advisory Board document; and (12) the 2005 BOSC program review report.

Overview of Charge/Rating Program Performance

Dr. Charlie Menzie, Exponent, Inc., Subcommittee Chair, and Mr. Phillip Juengst, EPA/ORD

Dr. Menzie explained that during the 2005 program review, the Subcommittee had a broad range of charge questions and each question was assigned to a member who took responsibility for drafting the response. The responses were consolidated into a draft report that was reviewed, discussed, revised, and approved by the entire Subcommittee. The majority of the program review report was completed at the face-to-face meeting. After the final changes from the Subcommittee were incorporated by Dr. Menzie and the report approved by the Subcommittee, it was presented to the BOSC Executive Committee. The same type of strategy will be used for this mid-cycle review; Dr. Menzie will determine writing assignments for preparing the draft mid-cycle report. Ms. Drumm added that because there are six members on the Subcommittee, it is advantageous to form three pairs to perform the work.

Dr. Menzie stressed that members should read the materials provided and make sure they understand them before arriving at the face-to-face meeting. He explained that the next teleconference will allow Subcommittee members to ask more specific clarifying questions about the areas on which they will be writing. He then presented an overview of the charge questions found in Tab C of the Subcommittee notebook. The Subcommittee's role is to evaluate the progress that the Land Research Program has made since the last BOSC program review in 2005 and provide feedback regarding the future direction of the Program. The charge questions are as follows:

1. How responsive has the Land Research Program been to the recommendations of the 2005 BOSC program review?

2. To what extent does the updated MYP provide a coherent framework for addressing research needs?

3. In response to the 2005 BOSC review, the Land Research Program made a significant shift in LTG 2 to the emerging research area of nanomaterial fate, transport, prevention, and mitigation topics. Does this shift in the Program have an appropriate balance of client priorities versus research initiatives?

4. Please rate the progress made by the Land Research Program in leading the Program forward in response to the BOSC review of 2005 by a qualitative score: Exceptional, Exceeds Expectations, Meets Expectations, or Not Satisfactory.

Dr. Menzie asked the Subcommittee members about their experience with nanomaterials, because he wants the most experienced member to deal with this topic. Dr. Lynne Haber responded that she had some limited experience in this field. Dr. Bob Siegrist replied that he has been following the subject but is not performing active research in this area. Dr. Menzie has tracked this field but performed no research. Dr. Jim Clark has been exposed to the topic via presentations to the BOSC and is aware of the issues related to nanomaterials, but that is his only experience. Dr. Menzie and Ms. Drumm will discuss the approach for providing the best coverage for Charge Question #3.

Dr. Menzie explained that the Subcommittee will work within the framework of the qualitative ratings to assign a score for the Program's progress since the 2005 program review. Each score has a detailed description, and the Subcommittee will discuss further how to best apply these scores at the face-to-face meeting.

Mr. Phillip Juengst provided background on the qualitative rating scores. He noted that developing good measures of long-term outcomes is a challenge, especially in terms of the length of time it takes for the program and regional offices to implement the Program's research in decisions that eventually improve human health and the environment. There are two drivers for the measures: (1) the Government Performance and Results Act (GPRA) of 1993, which requires all agencies to develop annual and long-term measures of performance, particularly outcomes that are linked to a strategic plan; and (2) the Office of Science and Technology Policy and OMB R&D Investment Criteria for Federal Agencies. The latter document is a component of the PART review, has been endorsed by the National Academies, and focuses primarily on quality, relevance, and performance. EPA has developed a suite of measures to track the areas of quality, relevance, and performance, and the BOSC reviews now extend this a step further by qualitatively rating EPA program performance. The rating scores were developed in early 2007 and added as a component to the BOSC program reviews to provide a rating, using defined categories and qualitative terms, of how the program is performing overall in terms of the quality of the research, its relevance to decision-makers, and its long-term impact.

The mid-cycle reviews provide a similar rating that is geared toward program progress; the mid-cycle review is not intended to rate performance in terms of achievements but in terms of the progress the program has made in moving forward from the last full program review. The mid-cycle review should assess the extent to which the quality and timeliness of the program improvements are likely to have an impact on producing science that can be used in decisions to achieve EPA's mission. The primary goal of mid-cycle reviews is to provide ORD with concrete information on how the various programs are performing overall and offer indicators about what programs can focus on to further improve performance. The second benefit is that the review provides a qualitative indicator of performance that can be used as a measurement for OMB.

Dr. Siegrist asked for clarification that the rating is not based on goals but on how responsive the Land Research Program has been to the prior BOSC recommendations. Mr. Juengst confirmed that the mid-cycle review rating is based on the responsiveness of the program to the BOSC's recommendations; the mid-cycle review will assess whether the quality, scope, and speed are appropriate to achieve the long-term outcome that will be assessed during the next full program review.

Dr. Siegrist commented that the first charge question is straightforward, but the second question is somewhat open-ended. Dr. Menzie thought Charge Question #2 was a standard charge question asked of all mid-cycle subcommittees. Dr. Clark confirmed Dr. Menzie's comment. Dr. Siegrist said he did not think many mid-cycle reviews had been completed to date.

Overall Progress Review

Dr. Randy Wentsel, EPA/ORD, NPD for Land

Dr. Wentsel provided an overview of the progress the Land Research Program has made since the BOSC program review in 2005. He explained that the 30 comments from the previous review could be combined into six categories: (1) the MYP, (2) addressing emerging issues and future conditions, (3) linking research to outcomes/impacts of the Program, (4) enhancing collaboration, (5) enhancing communication, and (6) topics more broad than the Land Research Program (e.g., hiring new scientists, risk assessment). Dr. Wentsel explained that the MYP was shifted to include emerging issues as a result of a BOSC recommendation as well as the low priority of hazardous waste research within ORD. The emerging issues include nanomaterial fate and transport, vapor intrusion into homes, wasting disease and disposal of carcasses, asbestos issues in building demolition, post-Hurricane Katrina debris issues, the fate and transport of biofuels in groundwater, and methamphetamine laboratory clean-up legislation.

Dr. Clark asked about the duration of research for each of the emerging issues. Dr. Wentsel answered that the vapor intrusion research has been a progression starting in 2005 and could last as long as the Program is able to obtain funding. The wasting disease effort is small, and Dr. Wentsel was unsure of the time frame of this research. The Hurricane Katrina, biofuels, and methamphetamine clean-up research efforts each just started within the last year. Dr. Wentsel will determine the duration of each of the research projects and provide a more detailed report during the next teleconference.

Dr. Siegrist asked how this shift has been received by Program staff. Dr. Wentsel responded that the nanomaterial shift was particularly difficult, but after some initial resistance, the researchers realized that there was a good core of individuals involved and they became more enthusiastic about the topic. The regions also became involved, which helped facilitate the shift.

In terms of outcomes and the impacts of the land research, the Program added a section in the MYP on progress to date, and the Land Research Program Web Site includes an accomplishments section, fact sheets that include impacts, and publications. Approximately 29 percent of the research highlighted in the Regional Summit research highlights was from the Land Research Program, and many regulatory support examples are provided in the progress report. Additionally, Land Program research resulted in cost savings in many areas, including landfill caps, permeable reactive barriers, arsenic mitigation modeling, and regional projects.

Because the BOSC recommended increased collaboration, Dr. Wentsel established an Interagency Collaboration on Environmental Remediation Research (ICERR) Workgroup in 2006. The ICERR works at the program manager level. The Program also collaborates with the Strategic Environmental Research and Development Program (SERDP) and the National Institute of Environmental Health Sciences (NIEHS) and contributed to the *Framework for Metals Risk Assessment* prepared by EPA's Office of the Science Advisor. The Program maintains strong cross-coordination with the scientific community and also has established a Web site as a resource to communicate to those inside and outside of EPA about the research the Land Program conducts. The Web site also provides science topic experts who can serve as points of contact, links to tools and models, and many other resources. The site has been especially beneficial in answering emergency requests for information from Congress.

Text was added to the MYP about the Superfund Innovative Technology Evaluation (SITE) Program and grants to research centers. All APGs within both LTGs were met in 2005, 2006, and 2007. All Annual Performance Measures (APMs) were met for LTG 2 each of the 3 years. For LTG 1, 70 percent, 90

percent, and 100 percent of APMs were met in 2005, 2006, and 2007, respectively. Products, research activities, and a sequence of publications accumulate to meet the APGs and APMs.

Dr. Siegrist asked who makes the determination that APGs and APMs have been met. Dr. Wentsel replied that at the beginning of each fiscal year the Program makes a list of goals to which it is committed to completing that year. At the end of the year, the Program determines how many activities on the list have been completed and calculates the percentage.

Dr. Haber commented that consistently meeting 100 percent of the goals generally indicates that the goals were not ambitious enough, but with respect to OMB's evaluation, it must be better to develop attainable goals. Dr. Wentsel agreed and stated that there is no benefit for reaching too high, because OMB only examines what has been met. Additionally, many other activities and publications are completed that are not reported via GPRA.

Dr. Wentsel then discussed the Program budget, citing amounts from 2006 through the President's 2009 budget. There have been cuts to the SITE Program and increases in asbestos research. The hazardous waste research budget has remained steady but is increasing in 2009 as a result of the added nanotechnology component.

Dr. Haber mentioned that 16 full-time equivalents (FTEs) were being devoted to nanomaterial research, but the budget shows only a net increase of eight FTEs. Dr. Wentsel explained that cuts were made in other areas, and the shifts were coordinated internally, so the overall budget does not reflect the specific details.

Mr. Tim Thompson asked how much of the budget represents federally allocated monies versus collaborative monies and grants. Dr. Wentsel responded that the budget reflects only federally allocated monies; the grants program was discontinued in 2006. Funds leveraged through SERDP and Cooperative Research and Development Agreements (CRADAs) also are not reflected.

In 2006, the Program received a PART evaluation of "Adequate." Also in 2006, the Program shifted to nanomaterial fate and transport, established a federal remediation research group, awarded $2 million to 11 short-term research projects to address Office of Solid Waste and Emergency Response (OSWER) needs, provided OSWER with information on ORD support at 50 sediment sites, conducted additional shifts to address emerging issues, and was involved in workgroups. It should be noted that the PART review took approximately one-half of all the time spent on projects in 2006. In 2007 and 2008, the Program finalized the MYP, responded to the Office of Superfund Remediation and Technology Innovation (OSRTI) for asbestos toxicity testing, completed the draft Nanotechnology Research Strategy, created program-specific fact sheets (e.g., oil spills), launched the Land Research Program Web Site, conducted a survey of OSWER and regional managers and staff, and conducted a bibliometric analysis.

Dr. Wentsel described the PART measures that had been established. For long-term output, the Program calculated the percentage of its research publications that were rated as highly cited publications or published in high-impact journals and used these two percentages as performance measures. For annual measures of LTGs 1 and 2, percentage of planned outputs delivered on time to clients was used. For program efficiency, the average time (in days) for technical support centers to process and respond to requests for technical document review, statistical analysis, and evaluation of characterization and treatability study plans was used. Dr. Wentsel concluded his presentation with a chart showing ORD activities across site cleanup.

Dr. Menzie asked for Dr. Wentsel's thoughts about the Program's collaboration with the regions. Dr. Wentsel responded that the Program is responsive to the regions' needs when designing regional programs. As NPD, he increasingly interacts with the Regional Science Liaisons, and they have helped in developing a one-voice response in working with the regions on science needs and communicating

science results. The interaction has been important and is moving in a direction that was not considered in 2005.

Updated MYP Review

Dr. Randy Wentsel, EPA/ORD, NPD for Land

The BOSC recommendations from the 2005 program review regarding the draft MYP were to: improve readability, better communicate information, consider a more scientific focus for the LTGs, highlight the benefits of Program, and discuss leveraging in LTG 2. The MYP was finalized in July 2007 and is available at http://www.epa.gov/ord/lrp/pdfs/land-myp-final-7-19f.pdf. As a result of the shifts into nanotechnology, however, the table pertaining to APGs and APMs will be updated this year. Also in 2008, regional workgroups will provide research priorities versus the current program plan. The MYP process was driven by: (1) the need to combine the Contaminated Sites and Resource Conservation and Recovery Act MYPs into one document, (2) a BOSC suggestion to perform more emerging issues research, (3) OMB's emphasis toward fewer LTGs, and (4) a need to revisit customer research needs. The main purposes of the MYP are to provide improved scientific knowledge and develop and apply more cost-effective tools. The MYP also has a very specific organization and structure. The structure includes a scientific orientation at the research theme level. Within each research theme, scientific questions are developed, and then activities and research are designed to answer the scientific questions. There were several changes to the MYP, including a substantive rewrite of Section 5 to emphasize the connection between the science questions and research activities.

To provide Dr. Wentsel a break, Dr. Menzie asked Dr. Charles Haas to provide more in-depth information about his background to facilitate Subcommittee planning and writing assignments. Dr. Haas explained that he is an environmental engineer, and the bulk of his work has involved drinking water and risk assessments, with an emphasis on microbial issues. He also has experience in hazardous waste treatment in the metals area. His expertise is evenly divided between treatment and risk assessment. He is familiar with the methodologies, statistics, and modeling of dose response and exposure, and although most of his experience is with infectious agents, he also is familiar with similar chemical methods.

Dr. Wentsel resumed his talk, explaining that Table 4 of the MYP, which deals with APGs and APMs, was reorganized by research theme to avoid the previous confusion about the table. The LTGs are presented in the MYP in terms of their research themes and the underlying science questions and research activities. Dr. Wentsel presented a diagram that illustrates how some APGs are linked to each other to support each LTG, and some APGs are independent in supporting the LTGs. Under LTG 1, the decrease in funding for the Superfund Program has resulted in decreased support for analytical methods within the multimedia area and elimination of the Hazardous Substance Research Centers and the SITE Program. The decreased funding affected customer service, so the Program negotiated with the Office of Science Policy to manage customer service requests. Asbestos health effects research, however, has been added to the Program's responsibilities despite the cuts. Within LTG 2, there is an increase in FTEs and funding for nanomaterial fate and transport research. Disaster debris research has been initiated, and Brownfields research is expanding. The multimedia modeling development within the resource conservation area of LTG 2 has decreased, which is unfortunate because other users, such as the Office of Pesticide Programs and the Environmental Results Program, have need for this modeling.

Dr. Wentsel highlighted research directions, including groundwater technology, permeable reactive barriers technology transfer, multimedia modeling applications that are applied to regulatory activities, and a project involving a comparative risk reduction analysis of waste minimization of priority chemicals (WMPC). The latter project resulted in a national-scale risk assessment for current and projected waste loading rates for selected priority chemicals. It retrospectively evaluated the effectiveness of historical WMPC reduction goals, and allowed the Office of Solid Waste to quantify the effectiveness of the WMPC initiative within the Resource Conservation Challenge Program using metrics of increased percent protection versus percent waste stream concentration reduction. Brownfields research allowed the

development of the Site-specific Management Approaches and Redevelopment Tools (known as SMARTe); the Brownfields Program also leverages ORD expertise and products, such as online calculators and a model evaluation guide, and partners with OSWER to receive additional extramural funds. Additionally, technical support is an integral component of the Land Research Program and involves more than merely answering phone calls.

The Land Research Program shifted to nanotechnology because: (1) ORD views hazardous waste research as low priority, (2) nanomaterial fate and transport issues are unique and will address important data gaps, (3) EPA can lead this area for the Federal Government, and (4) a cross-laboratory effort can address important science questions. The Nanomaterial Research Strategy will guide the nanotechnology research program within ORD and build on research needs identified by EPA and the National Nanotechnology Initiative. The Research Strategy describes seven primary research questions within four themes: (1) sources, fate, transport, and exposure; (2) human health and ecological research to inform risk assessment and test methods; (3) risk assessment methods and case studies; and (4) preventing and mitigating risks.

Under LTG 2's material management themes, the Program is performing landfill research and leach testing for material reuse to determine how this occurs in the environment. Decisions must be made regarding disaster debris disposal, building demolition, and newer streams of electronics and nanomaterials. Related research includes National Center for Environmental Research Requests for Proposals and grants for development of environment health outcomes indicators and children's environmental health, respectively. Small Business Innovation Research (SBIR) grants also provide related research. Additionally, risk assessment activities are important to the regions.

Public Comment

Ms. Drumm called for public comment at 12:35 p.m. No comments were offered.

Preparation for the Next Call and Face-to-Face Meeting

Dr. Charlie Menzie, Exponent, Inc., Subcommittee Chair

Dr. Menzie asked Subcommittee members to familiarize themselves with the provided materials before the next teleconference on April 24, 2008, at 10 a.m. Eastern Time. Mr. Thompson and Dr. Haas indicated that they will be unable to attend that teleconference.

Dr. Menzie and Ms. Drumm arranged to speak later in the afternoon about making the writing assignments. The most straightforward method may be to examine the assignments from the 2005 program review and proceed from there. The Subcommittee members will be divided in pairs for the assignments. Dr. Menzie asked the Subcommittee members to consider the areas and identify those on which they might want to focus. Dr. Siegrist commented that it was difficult to consider this before the writing elements have been framed. Drs. Siegrist and Haber and Mr. Thompson agreed to focus on those areas that Dr. Menzie thought would be best for them.

Dr. Menzie provided an outline of the agenda for the next teleconference. The call will include a series of discussions about the progress made under LTG 1. There will be short presentations from EPA staff on various topics under LTG 1. Subcommittee members should consider their own strengths in regard to the presented topics. The same process will be repeated for LTG 2. After an opportunity for public comment, there will be detailed discussions about the face-to-face meeting and the structure of the outline. Dr. Menzie will work on a draft, strawman outline for the report that can be discussed during the next teleconference. He asked if the Subcommittee members had any additional information needs.

Dr. Siegrist mentioned that the final product was supposed to be a letter report, which conveys that the length and content will be different than a regular report. Dr. Menzie agreed that the final product would

be relatively brief and include observations on progress related to the last review. Ms. Drumm added that Subcommittee members could visit the BOSC Web Site at http://www.epa.gov/osp/bosc and use the left-hand link called "Reports" to view the mid-cycle review reports that have been prepared. These might provide some guidance on the format and length of the mid-cycle reports.

Dr. Menzie asked what the Subcommittee members could expect at the face-to-face meeting. Ms. Drumm replied that much of the time would be devoted to Subcommittee discussion. The meeting begins at 10 a.m. Central Time and ends at 3 p.m. Central Time. The first 1.5 hours will be devoted to presentations by Dr. Wentsel and discussions of client surveys and topics covered via the two teleconferences. The remaining time is Subcommittee discussion time. Dr. Menzie asked if there would be poster presentations; Ms. Drumm responded that there would be no poster presentations at the meeting.

Dr. Menzie thanked the Subcommittee members for their time and efforts and adjourned the call at 12:52 p.m.

Action Items

- ✧ Dr. Menzie will work with Ms. Drumm to prepare writing assignments.
- ✧ Dr. Menzie will contact Ms. Drumm to discuss the best approach for covering the topic of nanomaterials (Charge Question #3).
- ✧ Dr. Wentsel will be prepared to discuss the duration of ongoing emerging issue research (i.e., Hurrican Katrina, biofuels, and methamphetamine clean-up) during the next teleconference.

PARTICIPANTS LIST

Subcommittee Members

Charlie Menzie, Ph.D., Chair
Principal Scientist
EcoSciences Practice
Exponent, Inc.

James R. Clark, Ph.D.
Environmental, Safety, Civil, and Marine Division
Exxon Mobil Research and Engineering Company

Charles N. Haas, Ph.D.
Betz Chair Professor of Environmental Engineering
Department of Civil, Architectural and Environmental Engineering
Drexel University

Lynne Haber, Ph.D., DABT
Toxicology Excellence for Risk Assessment (TERA)

Robert Siegrist, Ph.D.
Professor and Director
Environmental Science and Engineering Division
Colorado School of Mines

Tim Thompson
Science, Engineering and the Environment, LLC

Designated Federal Officer

Heather Drumm
U.S. Environmental Protection Agency
Office of Research and Development
Office of Science Policy

EPA Participants

Thomas Holdsworth
U.S. Environmental Protection Agency
Office of Research and Development
National Risk Management Research Laboratory

Phillip Juengst
U.S. Environmental Protection Agency
Office of Research and Development
Office of Resources Management Administration

Randy Wentsel, Ph.D.
U.S. Environmental Protection Agency
Office of Research and Development
National Program Director for Land

Contractor Support

Kristen LeBaron
The Scientific Consulting Group, Inc.

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BOARD OF SCIENTIFIC COUNSELORS

LAND MID-CYCLE REVIEW SUBCOMMITTEE
AGENDA
Friday, April 18, 2008
11:00 a.m. – 1:00 p.m. Eastern Time

Participation by Teleconference Only
866-299-3188
code: 2025648239#

11:00–11:10 a.m.	Welcome - Roll Call - Overview of Agenda	Dr. Charlie Menzie, Subcommittee Chair
11:10–11:15 a.m.	Administrative Procedures	Heather Drumm Subcommittee DFO
11:15–11:30 a.m.	Material Overview	Dr. Randy Wentsel Office of Research and Development
11:30–11:50 a.m.	Overview of Charge/ Rating Program Performance	Dr. Charlie Menzie, Subcommittee Chair, and Phillip Juengst, Office of Research and Development
11:50 a.m.– 12:10 p.m.	Overall Progress Review	Dr. Randy Wentsel Office of Research and Development
12:10–12:35 p.m.	Updated MYP Review	Dr. Randy Wentsel Office of Research and Development
12:35–12:40 p.m.	Public Comment	
12:40–1:00 p.m.	Preparation for Next Call and Face-to-Face Meeting - Discuss Writing Assignments - Identify Additional Information Needs	Dr. Charlie Menzie, Subcommittee Chair
1:00 p.m.	Adjourn	