The following paragraphs are transcribed member responses from Hanford Advisory Board's (HAB or Board) June Safety Culture Sounding Board. The follow responses do not represent consensus views of the Board. Each Board seat was provided with up to four minutes to respond to two safety culture framing questions:

Q1:   What does safety culture mean to you?

Q2:   Given the information provided at the April Board meeting, are there any situations that DOE can improve upon by better emphasizing and developing its safety culture?

Melanie Myers-Magnuson, "Non-Union, Non-Management" Employees
Q1: Safety culture to me means that from— top management down to the employee—there are sufficient aspects put into place to ensure that personnel and environment are kept safe.

Q2: I believe that DOE needs to ensure that during their planning, they need to identify all of the subject matter experts that could possibly need to be involved with that specific work activity so that they can use their knowledge to provide their perspective on and identify and safety issues. That may be missed otherwise.

Don Bouchey, Tri-Cities Industrial Development Council
Q1: To me, the effectiveness of safety culture is judged by actions and not rhetoric. It could be risk-informed. It requires the stability of funding, management, and workers, and it needs to have a sense of urgency.

Q2: Safety culture at Hanford is pretty good. I did have a feeling sometime that Integrated Safety Management System (ISMS) is faltering a bit. I didn't see much in the way of training or reference to that sort of thing. I think that there is a lot of room to improve in the handling of employee concerns.

Earl Fordham, Washington State Department of Health
Q1: Safety culture starts out with what's between your ears, and it delves down to all levels of an organization. It is needed to be the primary concern. Internationally, they look at it as more of a safety case mode, where you are developing a group of arguments and an analytical assessment to ensure safety. Then it is propagated into the field. Internally, you look at safety culture as keeping things from getting haphazard. You look at it as: "is there something that we're doing that is out of line? Have we forgotten something that has become second nature to us that we need to remember?"

Q2: In the Navy, there were incident reports that we routinely saw as we were out at sea or in port. Very valuable things. You can't really know everything that will happen at a given plant. You can study it, you can become an engineer qualified on that plant, but there will always be

something that will get you there. It will show up eventually. Moving forward with a bank of lessons learned, whether they be developed here, across the DOE complex, or world-wide. As a radiation safety professional with the state of Washington, we have limits in place for occupational exposure and for general public exposure. There are times in the scenarios that go on in our world where you have to exceed those limited, but the limits are set low enough to allow for this on occasion. You cannot legislate or make yourself 100 percent safe, so you've got to figure out what you're going to do if you have to actually exceed a limit. Internationally, that is called justification and optimization. There are processes that, perhaps, Hanford could use and have a workaround to come up with those angles and figure out how to do that. We already mentioned budgeting: safety and budgeting together rubs me the wrong way. Safety and planning—that's good. I like to hear the planning. Anytime you get the idea of money and safety in the same sentence, I'm kind of wondering. We heard this morning, for example, 618-11. Why was it delayed?

Sam Dechter, Public at Large

Q1: When I look at safety culture, I look at the word "culture" itself. Whether it is a quality culture, or a safety culture… culture means that you don't think, you just act. It is a set of behaviors that is so engrained. You don't make a judgment decision; it's not a choice. You don't have to juggle decisions and decide which is safer. You should never have to come to that conclusion—you just do safety. You use a step ladder— you put it down, you make sure that the feet are placed, the ladder is fully extended, and you figure out a way out if something happens—where are you going to grab onto. You do it without thinking.

Q2: I think that greater emphasis ought to be made on contractor performance review and associated penalties (fee reduction) if the contractor does not measure up to the standards that DOE is setting for safety culture and safety performance. I would fully encourage DOE to set the standards, hold to it, and be very stiff about it to get the message across to the contractors that it's all the time, it's everything that you do, no ifs, ands, or buts.

Pam Larsen, City of Richland

Q1: When I think of safety culture, I think back to the days when ISMS was the law of the land, and I had an opportunity to participate in the ISMS and Environmental Protection Programs reviews as a representative of the HAB. Safety culture is top to bottom accountability for safety, where there is no question that raising safety concerns is an expectation, and that when a question is raised it should be respected and analyzed and there should be no consequences. And when an accident does occur, that there is also an analysis that shows how and why it occurred so that it does not occur again in the future.

Q2: I'm stunned that Becky Holland did not get a response "we'll be on that." She should have got that, and that was appalling. I want to go back to my ISMS experience. As chair of the safety committee of the HAB, I was one of the first outside people that got to participate in a Voluntary Protection Program (VPP) review, and it was with Fluor Federal Services. I chose to be part of

the team that interviewed the craft. Safety culture was engrained in them; I was so moved. There was no way that anyone could have conned them into giving an answer that was different than what was in their heart. So, I encourage the opportunity to have stakeholders participate in VPP reviews. It has to come from the top. Fluor had an amazing physician in charge of their health and safety program, and he believed in it. He turned a company that was not performing well because people were afraid of raising safety issues into a company that believed in it. Safety culture is personality-driven.

Shannon Cram, Citizens for a Clean Eastern Washington

Q1: Culture is a shared set of beliefs and practices that would be revolving around safety, but my emphasis would be on "shared." I think that is what is missing. The emphasis on shared cultural beliefs and practices that revolve around safety so that it is not just some people thinking one thing and another group of people thinking other things, but that it is something that is communicated and jointly held. However, just saying "shared practices" misses the element that culture is about power. Shared is the ideal, workers and administration having a shared idea of what constitutes safety for their bodies and their families. That, of course, is infused with history and power, though, and that is what we need to be attentive to as we consider bettering the safety culture at Hanford.

Q2: We had a really good example this morning of a worker telling management that "it is not safe when I do my job every day; there is nowhere to cool down, there is not enough space to change out air tanks." If we were practicing appropriate safety culture, that would mean a stop work, because of that complaint, until the issue is resolved. We saw a really clear choice about budget over safety in this room, several hours ago. Part of a safety culture is knowing that you can trust when someone says that something is safe, that it is safe. To start the meeting with this really hopeful video of how they monitor for vapors in the air and then a few minutes later to have one of their own workers say that "I don't feel safe and no one is listening to me," it discredits the good work that is being done to monitor. Now I see that video that we saw first thing this morning really differently. I feel like you're just throwing money at some technological issues, but, if you don't fundamentally change the culture in which workers can't be heard when they are saying "I don't feel safe right now, and I need you stop work until you fix this," all of the monitoring is less meaningful.

Antone Brooks, Benton-Franklin Public Health

Q1: Safety means different things to different people, and we all have different degrees of safety culture built into us. I think a safety culture is a place where you can talk about any hazards you want and you can have a discussion where you don't agree with one another. When I was a kid we did not have seatbelts in cars—now we do have seatbelts, which is good. We have to do is to decide what is adequate and appropriate as opposed to just forcing everyone to do a set of rules. Safety doesn't have to depend on the most fearful person in the group; safety culture does not have to be set at that level. You have to attack real problems and solve with real safety issues as opposed to jousting at windmills and setting up scarecrows.

Q2: Measurable effects is one of the points that was brought up. Look at the Hanford safety record—they are one of the best around. I don't know if you've ever been to one of the big farms around here, but working there is really a hazardous job. The Hanford record is good. The other thing is, I think, attacking real problems. We said that the major risk to Hanford workers are accidents commuting to and from work. Why don't we do something about commuting accidents. When we ignore that it's almost worse than ignoring a whistleblower. Coming back to adequate and appropriate—can inappropriate safety practices increase risk and impacts to safety? For tank vapors, have we hurt more people with all of the protective equipment than we've saved from lack of exposure? That may be an obnoxious question, but I think that it's one that we ought to evaluate. You put [workers] in those things, and you have heat exhaustion and other problems. Are we really being safe because we've done something.

Susan Leckband, Washington League of Women Voters

Q1: I will talk about safety culture internally, for the workforce on the Hanford Site. For me, safety culture is looking at every task from a safety perspective at first and understanding that you need the right equipment, talent, and ability to define the task immediately. If there is a question about the task or the safety associated with it, the management is obligated to mitigate any safety issues that goes with that particular task. It is a group effort and everyone should be involved.

Q2: One of the aspects where I think that improvement could be had is in budgeting. I don't know that there are specific dollar amounts attached to the budgeting process for safety. I'm going to cite something specifically, and that was earlier today when Becky Holland talked about the concerns that workers are having to work and suit up in: they have to be outdoors, there is not room for them, there is a safety concern there. If there were budgeting processes in place that identified a pot of money for those emerging safety questions, you could respond by getting a portable trailer out there so that they have room to change. To me, there is a miss in the budgeting process.

Helen Wheatley, Heart of America Northwest

Q1: I actually spent a lot of time struggling to understand what safety culture means in terms of the way that the industry seems to apply it. There seems to be a big difference between what is talked about in the literature on safety culture and what it means in terms of what we're saying now. For me, safety culture as a term seems to be used in the industry as a tool to achieve better safety performance. But, like a lot of others have already noted, culture is what comes down to what people do. Safety policies and procedures become culture whenever they are enacted and practiced. What I want to emphasize is that there are structural elements, not only in terms of project management and planning, but also in terms of incentives, costs, sanctions, and oversight, because these are the pressures that shape the culture. Cultures are shaped by outside forces, as well as coming from inside. I worry—when I read the literature about safety culture and the materials that are generated on the subject at Hanford—that safety culture is coming to mean something very specific within management theory. That

safety culture is being used as a tool, and that is a very long journey from the roots of safety culture. The split between the current meaning of safety culture and its original meaning is a worry that I have.

Q2: I feel uncomfortable personally that I don't have a background. I want to emphasize the importance of constant testing. The need to be constantly checking for weakness and testing. The International Nuclear Safety Advisory Group has described what it calls a typical pattern of declining safety performance as a series of stages: overconfidence, complacency, denial, danger (like when a few potentially severe events occur but management and staff reject external criticism), and finally collapse (where problems have become clear to everyone to the point where outsides have to come in, management is overwhelmed, and a major and very costly improvement program usually has to be implemented). In another study, from the health industry, this was characterized as the airplane crash, where there is enough public attention that whistleblowers can come forward, external agencies can get involved, and so on. Is DOE testing itself and is it modelling. When something does go wrong, the public needs to heard about the issues and needs input into the questions. When is outside help and support going to be used to bring in help. It is important to have a plan for when something goes wrong. The concept of constant testing... it has to apply to those being regulated and regulators.

Jerry Peltier, City of West Richland

Q1: I fought this all my life when I worked on the site. There is a tremendous difference between a safety culture and a safety program. Safety culture is like a religion, while a safety program is a set of codes and standards. All of the safety practices, codes, and standards of today are a result of accidents. Everything on the books today is the result of an accident or injury, while the culture is the willingness to practice these standards that we have learned.

Q2: I think that we need to differentiate between safety programs and the implementation of those programs, and the philosophy of the contract management to implement those programs versus the culture itself. You have many 185 radioactive tanks out there, 20-50 years past their design life. The HAB has made recommendations that they build new tanks to make that safer for the workers and for the region. Culturally, if DOE believed in that, they would be building new tanks. But they don't. They have programs, but they don't have safety if they don't want to fix the high-hazard risks out there on the site that would benefit the region.

Richard Bloom, City of West Richland

Q1: My answer comes back in two parts. I think of safety culture as being both something that is internal and something that can be seen looking into an organization, because safety culture is very difficult to judge looking from the outside of an organization. To me, safety culture is individuals understanding their safety envelope. The safety envelope at Hanford is huge, because safety is all sorts of different directions. That is from inside. Safety culture looking into

an organization is usually performance based. That's the reason that I was bringing up both aspects of it.

Q2: I only heard answers that gave situational aspects. My personal feeling is something similar to what Liz said in resolution of contrary opinions. In some aspect, safety culture needs to come into the scheduling aspect, in scheduling the work. Those are the areas where I feel, from personal experience, that there is weakness.

Alex Klementiev, Physicians for Social Responsibility

Q1: I would distinguish between personal and organizational safety culture. Personal safety culture, to me, means that a person is educated about potential risks. It is the personal decision to be equipped with the tools, instruments, and discipline to protect oneself and family from risks. These are personal rules. The other safety culture is organizational. This safety culture is up to those who manage the organization and who are responsible for the safety of people. It is up to them to educate workers on personal safety culture.

Jean Vanni, Yakama Nation

Q1: One of the things is that when you resolve or seek to resolve an issue—it does not impact the work scope. There were some errors and injuries on the Hanford Site, and some sampling events where someone slipped and broke their ankle or something, and it delayed sampling efforts for ten months or so. It was an inordinate amount of time. This is from the outside perspective. I also think that you need to employ medical staff who are actually knowledgeable, have worked in the field of radiation and chemical exposures. I think that this is a safety culture that is basically for the workers. If it is for the entire public, then there needs to be more consideration given to what is being built and what will happen as a result of cleanup. It needs to consider what my tribe is going to be doing in the future when all the rest of you are gone. What are the impacts? I don't know if there is an awareness of issues, for example the Waste Treatment and Isolation Plant (WTP). If the outward boundary includes Gable Mountain—that is one of the Yakama's sacred sites. If the decision to go out there was made because it was cheaper to do so, that does not sit well with us.

Q2: One of the things that is bothering me that may have already been brought up: I don't know what is in place to help to improve the safety culture for when there are wind events and you need to make sure that contamination has not spread. I do not know if that is at the contractor level, I don't know if that is a safety issue if it results in widespread contamination concerns.

Gary Garnant, Grant & Franklin Counties

Q1: I am working in a safe culture if my employer provides a safe working environment and also provides safety training. I had that here at Hanford. I remember that we went outside and put out fires with fire extinguishers, and we had cardiopulmonary resuscitation training as a group.

On the very day of that training, someone in my group saved a driver ahead of them that slumped over the wheel and had a heart attack.

Q2: From our April meeting, I appreciate that it brought up the point that any worker can call a stop work when they see a dangerous situation, and that is such a strong tool for any safety group to have. I am glad that is being emphasized here at Hanford.

Mike Korenko, Grant & Franklin Counties

Q1: The basis of safety culture is caring about the safety and health of yourself and the people within your sphere of influence as if they were a member of your own family. The sphere of influence includes every person in the workforce, but managers have a larger sphere of influence just because of the accident of their role and position.

Q2: All in all, I think that the safety culture at the Hanford Site is not that bad. I give it a "B." It is encouraging that people are trying to improve it. I have been at other sites in other industries that would look at this Site as heaven. If I had to make any specific recommendations, I would say to continue to push on integrated safety management. It seems to come and go, and it seems like a program as opposed to something that needs to be institutionalized. I also keep advising and recommending that DOE encourage contractors to do a 360-degree safety evaluation of the principles of behaviors of their management team, because my opinion is that there are about five percent of managers who should be taken out of the management positions. They are the ones who are causing whistleblowers and other safety concerns. That tool is so effective in pinpointing those people who should not be there.

David Bernhard, Nez Perce Tribe

Q1: Safety culture is the overall values and processes that take priority for all operations, facility designs, procedures, response drills that assures all reasonably undesirable outcomes do not occur or are controllably minimized.

Q2: I would say that certainly DOE has an excellent track record, as far as injuries on the job. However, DOE, on larger things, the Waste Isolation Pilot Plant explosion or what has happened at the WTP, are examples of safety issues related to processes, which are pretty poor. Maybe one of them was accidental that was overlooked just to save a bit of money. The other one was intentionally overlooked to keep the cost and schedule in mind, even to the point of terminating people to keep it from coming out. That's just really an internal thing. DOE does really good with the day to day things, but long-term, it has not worked out.

Bob Suyama, Benton County

Q1: My observation is based on years of working at the Hanford Site and other DOE sites. Last time we had a briefing by DOE that talked about safety presented it as a management, top-down program. I have seen many viable, top-down management level programs. The key is

flowing that safety consciousness down to the workers. It is more than giving workers a logoed tee shirt or coffee cup. It has to be something that gets through what I call "the frozen layer"— a layer where everything kind of stops. At one point, this was called the Wheebees-layer, which stands for "we'll be here after you're gone."

Q2: My comment is a follow on to the excellent acquisition advice that we worked on before lunch. In our contracts that we place, we have to have an innovative contract process that rewards safety getting work done in the field, versus the current focus right now which is to meet award fee goals and milestones. An example would be significant penalties for safety issues that are out there. The main thing that I am still concerned about is that one of the of the HAB's primary principles is safety of our work force. The tank vapors issue is a key area of interest for the Tank Waste Committee. Because of the legal impacts, where you can't find out information, it is really frustrating for us on the committee to not be able to find out what is going on and what progress is being made to safeguard our workforce.

Gene Van Liew, Richland Rod and Gun Club
Q1: Safety culture is understanding the necessary requirements, following the procedures, observing and passing information onto others and management, being committed and patient and practicing the policy.

Jan Catrell, Public at Large:

Q1: Safety culture for me has to do with a partnership between workers and management, but that the management has a larger share of that responsibility. They are responsible for making, not only the commitment, but planning and issuing the policies and procedures that the workers follow. In that way, it becomes shared and it becomes a workplace culture. But the managers are required to make decisions, for example, about personal protective equipment. If they go out and have a look at what is out there and they think that personal protective equipment is best for a job, it becomes the legal responsibility of workers to use that personal protective equipment once that decision is made. If a safety culture includes policies, programs, and procedures, one of these procedures is to go back and evaluate how it has impacted the injury rate for a workforce. There should be objective measurements for how effective a safety culture is in combating the problem.

Q2: My remarks go to the whistleblower. When you describe the safety culture you describe it as a shared kind of cult between management and workers, with management having the lead. But the whistleblower turns that shared relationship into an adversarial relationship. And so, managers tend to push back because it impinges on their privileges. I think that it may also impinge on their bonuses, the compensation that they get for having a good safety record. If it is going to be a true partnership, then the people who are on the ground and who see these situations need to be free to speak up.

Tom Galioto, Public at Large:
> *Q1*: I don't particularly like the term "culture." I would say that a top-notch safety program includes influence that safety is top priority, that every employee is in charge of their own safety, and that safe performance is rewarded.
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> *Q2*: I throw my support behind the comments that have been made about Becky's early situation. I was surprised that we did not get more positive and aggressive action to deal with that. The two situations that I would highlight—one has been discussed already here and that is the WTP attention and approach to resolving some technical and safety issues that have come up on that project while they are being addressed, I feel that maybe the communication about the schedule to resolve them has not yet been made. And the other issue is the tank vapors. That has been going on for over a year at least. I know that there has been a lot of activity with monitors installed and some new technology to be deployed, but we heard this morning that it is only in testing. Therefore, we are still working through inefficient work practices with Self-Contained Breathing Apparatuses and high heat situations.

Garry Busselman, Public at Large:
> *Q1:* To me, safety culture is really both directions—it is top-down but also bottom-up (the part that really makes it work). The workforce has really got to feel that they are doing the right thing and that they are not dying. We may have all forgotten that 18 people died in the original construction of Hanford, and, that was a completely accepted, okay thing. Today we do not think that is acceptable or okay. It is both directions. If you just give rules and the workforces does not take on those rules and live by them, then you do not have a very safe workplace.

Dirk Dunning, Oregon Department of Energy
> *Q1*: Safety culture is frequently a misunderstood term. It encompasses all aspects of safety. Safety culture was born in the aftermath of the Chernobyl catastrophe; as a direct result of the Chernobyl catastrophe. Safety culture began as a simple idea that people had: never again. The problem with Chernobyl was a technical problem in the design that came about as a cost and an energy saving effort. It was a group that was highly motivated and highly qualified and had achieved safety awards routinely, and they blew up the plant. Stated simply, safety culture is the desire to prevent any similar disaster from ever occurring again. That has failed. The phrase includes all aspects of safety and ensuring that the culture of the organization focuses on safety. At its core, safety culture is about preventing disasters. And preventing disasters is all about design choices that prevent them from ever being possible in the first place. It is not about designing systems first and them modifying them to make them safer or mitigating safety in. It is about preventing disaster from the beginning. One thing with safety culture is to constantly challenge the design of new systems. It is a frequent problem that systems were designed to a past standard and that problems were missed. Therefore, they always need to be searched for. Also, there is a problem that in our society we focus on money (what do things cost and how much can we afford?). The routine problem with safety culture is that most of the impacts do not get assigned dollar values and, hence, the economic evaluation is wrong. The routine thing is

that doing anything for safety and the environment pays back between seven--eleven to one, regardless to what the primary cost analysis may say.

Q2: The implementation of safety culture is always a difficult thing. The best examples of a culture that is safe include, for the most part, things like having management not think of themselves as being separate from the workforce. It includes things like having management not just tell folks what is safe, but implement by being the very first to do dangerous operations themselves, personally, and to periodically be the one to do those same jobs so that they, too, are on the line along with everyone else. This is the basis of a nuclear sub safe culture that was implemented. When you weld on a nuclear submarine, there is a lottery and you may get a chance to go to sea trial on the sub. You were encouraged to rat on a friend if they were not working safely. I apologize if I sound a bit stern—I have come too close to being severely injured myself, and I know too many people who either have been severely injured or come close to being so. It is very personal to me. There are a bunch of things about how safety culture is done, and how it is done best. The best thing there is to learn from others. If we don't learn from others, then we are doomed to repeat what has happened to them, which is not a good thing. One other example for safety culture best practices—if you have criticisms or concerns, management and workers need to take that as their very own. It isn't that someone else said it; I said it. Now, how do I resolve that in my own mind that it's not taking somebody else's complaint, it's my complaint.

Liz Mattson, Hanford Challenge

Q1/Q2: The radioactive and chemical inventories stored at Hanford are the largest in the nation. Much of Hanford's infrastructure is old and decaying. A release of even a small percentage of toxic and hazardous materials from a nuclear waste tank, a burial ground, or B Plant (just to name a few examples) would cause both on- and off-site consequences of an unacceptable nature. In this environment, a robust nuclear safety culture is not only essential but a condition of operation. Yet Hanford is far from achieving the goal of establishing and maintaining a robust nuclear safety structure. The high-profile terminations of senior technical managers at the WTP sent a resounding message to all Hanford employees about the consequences of speaking out about safety issues. That message is: no matter what level of employee you are, you are not safe from reprisals for speaking out. In the past several months, there have been three whistleblower cases argued before a court, and, just last week, a new case alleging whistleblower reprisal was filed. But these cases are not the issue, just symptoms of the issue. The issue is that employees must be empowered and protected for raising and reporting concerns. There is a widespread perception at Hanford that if you speak out, you will suffer consequences. No amount of training, posters, billboards, and media pronouncements will change that perception. The only thing that will change the perception of employees about retaliation is behaviors. Stop retaliating. Invoke meaningful consequences for contractors and employees that engage in retaliation. The reason things are not changing at Hanford with regard to safety culture is plain and simple: leadership failure. When Hanford leaders start taking these issues seriously and

commit to change, and change their behaviors, matters will begin to improve. Though it will take a while to change the patterns of reprisals over the past decades.

In response to Becky's comment this morning about working in T Farm, I was also shocked that there was not a statement of "I am concerned about what you just said." It makes me very concerned.

Steve Hudson, Hanford Watch

Q1: As a rhetorician, it is nice to be at this end of the queue. In this conversation-- if you have ever studied the definition of *genus et differentiam* (by class, with its different qualities), we had a beautiful example of that in this conversation. Shannon made the statement that safety culture is a set of shared practices. From that comment on, everyone else in the room did two things with that idea—you looked at the various elements and ideas that are a part of that shared practice, and many of you also recognized not only the shared activities, but also the fundamental characteristics, the attributes, that are a part of those shared activities. That framework provides us with a wonderful definition of safety culture, because we can set up both parts.