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"TALK TO ME!" - LESSONS LEARNED IN COMMUNICATING RISKS TO TENANTS AND OTHERS INVOLVED IN THE DEPARTMENT OF ENERGY'S REINDUSTRIALIZATION PROGRAM

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ABSTRACT

Communicating risk information is more difficult than assessing it. The latter relies on data, formulas, theorems and mathematical relationships that, with some effort, can be logically explained to another person; it's objective. Communicating risks, however, is subjective and relies on personalities, perceptions and predisposition, as well as emotions. Most notably the emotion is fear – fear of the unknown, fear of the message, the messenger, or the impact of the information on something of value to the person asking the questions. The Department of Energy's Oak Ridge Operations Office is engaged in a Reindustrialization program to lease (and most recently, to transfer) formerly used facilities to private sector entities. The facilities are located at the East Tennessee Technology Park, originally a gaseous diffusion plant operated to enrich uranium for World War II efforts and later for use as fuel in civilian nuclear reactors.

DOE's leases are executed via various provisions in the Atomic Energy Act of 1954 (AEA). DOE conducts the environmental review aspects of its transfers using the process included within the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), under Section 120(h). While the process does not require risk assessments, DOE uses them regularly to assess risks to tenants, or new owners in the case of title transfers. The information from the assessments is also used to answer the many questions that have been posed over the years by tenants, bankers, regulators and others involved in the Reindustrialization process.

DOE's Reindustrialization program employs numerous communication methods used by Reindustrialization, especially a valuable communication tool - the "Risk and Dose Fact Sheet" - which in its simplicity, has been used to help answer virtually all of the questions we have been asked in regard to human health risk. That statement reflects quite favorably on the fact sheet's contents, layout and design, and readability. The skill and sensitivity of the personnel who have been the human face (and/or voice) working with the tenants, are most complementary of these methods.

BACKGROUND

The focus of the Department of Energy- Oak Ridge Operations Office (DOE-ORO) Reindustrialization program is the East Tennessee Technology Park (ETTP) a DOE facility on the west end of the City of Oak Ridge. The ETTP had its beginnings as one of the facilities built by the Manhattan District-Army Corps of Engineers as part of "the Manhattan Project", the massive, all-out effort by the United States to build an atomic weapon to defeat Axis forces in World War II. Oak Ridge was involved in the enrichment of uranium for use in an atomic weapon.

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DOE used very large buildings in the technology implemented to enrich uranium. At peak operation five large interconnected enrichment process buildings and supporting process building covering nearly 1, 021,900 m^2 (11,000,000 ft^2) were involved. Within those buildings one could find a great deal of uranium, lubricating and hydraulic oils laden with polychlorinated biphenyls (PCBs), and asbestos. Support facilities – a city unto itself - were required to enable this massive enrichment process to work. Included on site were machine shops, power plants, radiochemical and other laboratories, development and testing operations, warehouses, rail lines, process utilities supplying pressurized air and other gases, as well as offices, a medical facility, a fire station, and a cafeteria. (See Figure 1.)

Contamination of the buildings, soil, and groundwater occurred as a result of the work that went on at ETTP from 1943 until it was shut down in 1987. In 1989 the Environmental Protection Agency (EPA) placed the entire Oak Ridge Reservation (ORR) on the National Priority List of sites that posed an imminent hazard to human health and the environment. In 1991 DOE entered into a Federal Facility Agreement (FFA) (1) with the EPA Region 4 and the Tennessee Department of Environment and Conservation, DOE Oversight Division (TDEC), on how the clean up of the ORR would occur. That document governs clean up and by virtue of reference and incorporation also governs how the ORR land will be used.

CERCLA (2) is the "driver" behind the FFA. Implementing clean up under CERCLA requires a variety of actions in determining clean up methods, schedules, etc. A major element of CERCLA clean up is that it is risk-based, i.e. that risk reduction is the primary goal. Another consideration of CERCLA is that future land uses be determined so that clean up decisions may be made in light of the future uses. As an example, if the future use is proposed to be residential, clean up must be to residential standards, essentially pristine. For a future industrial use – which is the future use that has been determined for ETTP – clean-up levels need to attain industrial standards.

PART I. A REINDUSTRIALIZATION PRIMER

Reindustrialization has always sought out opportunities.

DOE held an "Industry Day" in April 1996 to showcase the facilities and resources available at the ETTP. Hundreds of people came from across the country to see the site. DOE had positive feedback and a vote of confidence that a leasing program could be successful. Although the site was undergoing clean up under CERCLA and had a long-term clean-up schedule, opportunities for leasing were available provided that DOE used the provisions of CERCLA 120(h) to safely enable others to use the site.

CERCLA Aspects of Leases and Title Transfers

CERCLA 120(h) speaks directly to real property to be leased or transferred by federal agencies where hazardous substances have been stored for a year or more, are known to have been released, or have been disposed of (3). The intent of 120(h) is to disclose information on past and/or present uses that have involved the storage, release or disposal of hazardous substances to a future lessee or owner. As the entire ORR is included on the NPL, CERCLA 120(h) clearly applies.

CERCLA 120(h) provides a list of items for notification that must be included in documents prepared for property transfers where hazardous substances have been stored, released, or disposed of, as noted above. The elements for notification include aerial photographs, information on the types and quantities of hazardous substances stored, etc., a recorded chain of title, records in regard to adjacent facilities where

hazardous substances may have been stored, spilled, etc., and interviews with current or former employees involved with facility operations.

The elements reflect minimum requirements; more detail or other types of information may be obtained and reported, but it is not required. There is no mention of any risk assessment requirement.

Since the Reindustrialization program began in 1996, dozens of facilities have been leased – over 111,480 m^2 (1, 200,000 ft^2) in all, as well as 931 ha (2300 acres) of land. They include quite a range of facility types found on the ETTP including:

- All of the site's utilities (except electrical service which is provided by the Tennessee Valley Authority) including steam, natural gas distribution, water, and wastewater treatment
- Roads and grounds for maintenance purposes
- Railroad and the railroad right-of-way as well as the associated scale house, railroad bridges, and related facilities
- Warehouses
- Maintenance and machine shops and the specialty equipment they contain, such as drill presses, lathes
- A barge facility and the laydown area adjacent to it
- Support facilities, the cafeteria, office buildings, laboratories, change houses, and portals

PART II. THE MOVE FROM LEASES TO TRANSFERS

In February 2002, DOE Headquarters (HQ) issued a Review of the Environmental Management (EM) Program for presentation to the Assistant Secretary of Environmental Management. The report, usually referred to as the "Top-To-Bottom Review" (4) had as its major conclusion that "The Environmental Management Program's focus has been on managing risk, rather than actually reducing risks to workers, the public and the environment."

Because the ETTP was a small, lower relative-risk site compared to other DOE sites such as the Savannah River Site in South Carolina or the Hanford Site in Washington, DOE HQ had slated ETTP for closure. According to DOE-ORO's response to the HQ report (5), ETTP facilities would be demolished and risks reduced, and the closure of the site would be accelerated by eight years. Instead of leasing facilities, DOE's Reindustrialization program would transfer them to the private sector. The future industrial-use scenario that was the foundation of the ETTP clean-up was now in sight; once the unnecessary facilities were demolished, all that would be left was a selected group of transferred land and buildings. Figure 2 depicts the present ETTP and a future ETTP with the excess buildings demolished and the transferred facilities remaining.

Discussions were held that involved DOE and the recognized community reuse organization for leasing excess or underutilized DOE facilities, the Community Reuse Organization of East Tennessee (CROET) and a group of buildings and land areas that would be candidates for transfer were identified. They include a mix of those types of facilities listed earlier, but also notably include three facilities that were used in gaseous diffusion, a large waste storage complex, and critical site services such as the emergency operations center and the fire department. The majority of the facilities to be transferred are non-

Fig. 1. The Oak Ridge Gaseous Diffusion Plant (1945)

radiological buildings, having never been involved in process operations, but as with those leased, their "degree of clean" status varies.

PART III. ASSESSING RISKS

Risk assessments are not required for leasing or transfer under CERCLA 120(h). When Reindustrialization began leasing, no formal risk assessments were prepared, but risks were considered by evaluating the radiological survey data for the particular facilities. If a facility had radiological levels at or below the DOE free-release limits found in DOE Order 5400.5 (6) - 5000 disintegrations per minute (dpm)/100 cm2 for fixed contamination and 1000 dpm/100 cm2 for removable or "loose" contamination – then it was deemed suitable for leasing. (Free-release means that an item or facility can be given to the public; thus it requires no radiological controls). Other site information was used in making leasing decisions as well. DOE has an extensive amount of soil and water sampling data, process operation and facility data that was also used to help make the very early leasing decisions. In response to questions from EPA and TDEC about the

radiological data and the conclusions being reached, DOE started computing the risks associated with the radiological survey information collected prior to each lease (or the existing radiological survey for the facilities). These assessments used only existing data.

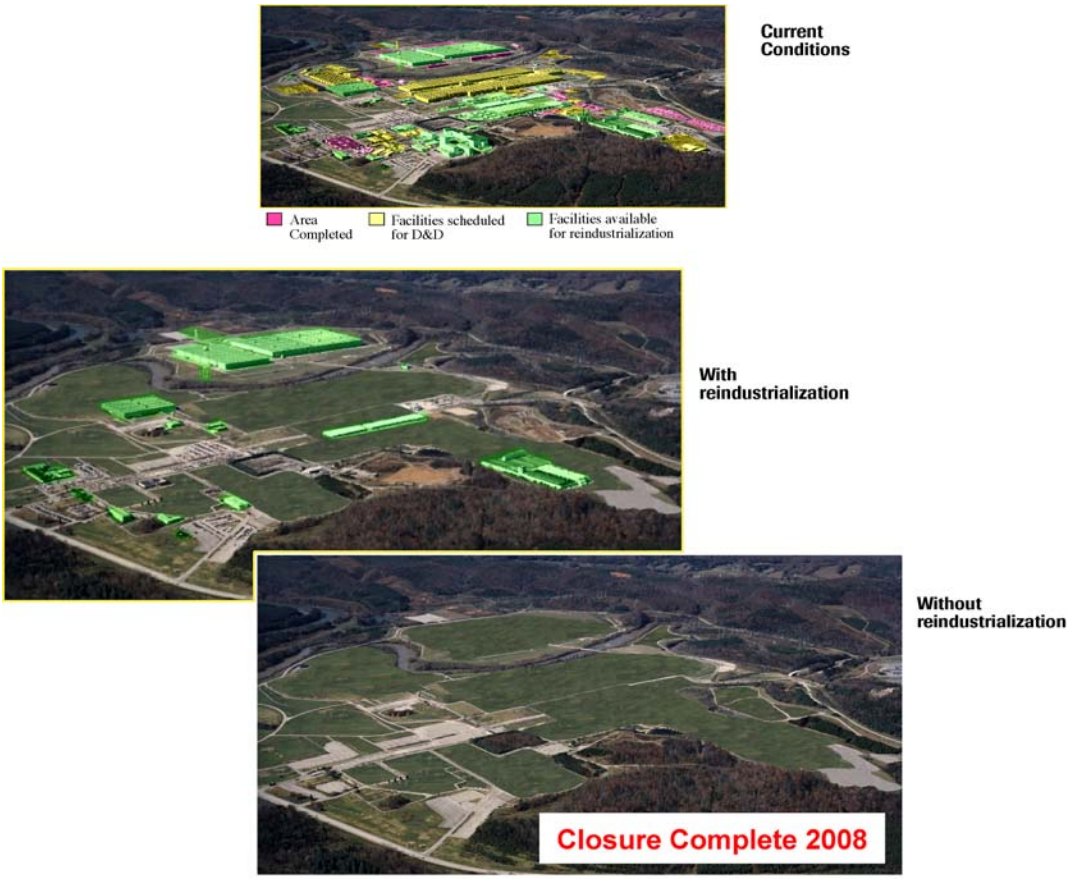

Fig. 2. Transitioning ETTP from the Present to an Industrial Park

Based on these initial questions, DOE developed a formal process for calculating and reporting these risks. Typically, existing radiological data for the facility were used (and no new data were collected). It was noted that data sufficiency needed to be addressed and survey plans were developed for collecting radiological data for the purposes of risk assessment. In many cases, the existing data only needed to be verified with little supplementation. In other cases, a complete radiological survey was needed because limited or no radiological data existed for the facility (for example, minimal data would be available for an office building).

Only the facility interior was considered for the radiological exposure scenarios. Questions arose during reviews about where these facilities were located on-site and how workers could be exposed to environmental contamination while taking breaks or walking to and from the parking lot. These questions caused DOE to consider outdoor exposures as well. Based on occupancy patterns, scenarios were developed for outdoor exposures. Existing data were used to estimate risks to workers outdoors. The existing data set was comprised of project-specific data for the areas of known concern. For radiological data, areas of concern had had extensive study, and a large data set existed for the site.

In areas where no soil data existed, DOE began collecting data to support the risk assessments. If subsurface disturbance was part of the leasing scenario, subsurface soil sampling was conducted. EPA/TDEC reviewed the sampling and analysis plans prior to sampling. The tenant's occupancy patterns were used to develop the exposures to soil contamination. EPA also had a concern about changes in the tenant's work patterns that might not be reported to DOE. Because of this concern, DOE developed a reasonable maximum exposure (RME) scenario for inclusion in the risk assessment (in addition to the actual tenant scenario). If the RME scenario was deemed acceptable with respect to risk, and if the tenant were to change their occupancy patterns (e.g., work full-time outdoors), their activities would still be within the acceptable range.

The approach to radiological data collection has been similarly varied. As stated earlier, initially only existing data were used. Then a more thorough data set was collected; attempting to identify data gaps and to conduct biased surveying. Then the program adopted a Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) approach for leasing. [The MARSSIM (7) describes a consistent approach for planning, conducting, evaluating and documenting building surface and surface soil final status radiological surveys for demonstrating compliance with dose or risk-based regulations or standards while at the same time encouraging effective use of resources. The MARSSIM is a multi-agency consensus document that was developed collaboratively by four Federal agencies having authority and control over radioactive materials: the Department of Defense, DOE, EPA, and the Nuclear Regulatory Commission. (8)]. The MARSSIM approach is more appropriate when facilities will be transferred out of DOE control.

The current approach for title transfers is the same as what has been developed for leasing with the exception that because the actual occupancy patterns are unknown, the RME scenario is used to model risks. To be conservative, an occupancy duration of 25 years for 10 hours per day is assumed for an office building; this assumes an 8 hour day plus some occasional overtime. For a manufacturing facility a 12 hour day was assumed – 8 hours plus occasional half-shift overtime.

Risk Management Decision Making

Before making a decision on the lease of a facility, DOE has conducted a number of analyses. Some analyses, such as the 120(h) and risk assessment process described above, are based on environmental attributes of the property proposed for lease or transfer. Business decisions are also made such as evaluating the potential tenant's operating history at other locations, if applicable, its reputation within the industry it represents and other "due diligence" actions. A lease rate is established, a facility footprint defined, parking and material storage arrangements made, and contingent CROET board approval is sought by the CROET officers. DOE also considers, after reviews of the environmental and safety aspects of the proposed operations, whether the tenant's activities are compatible with the facility and suitable for ETTP. Once all of those interim decisions are made, it is then time for DOE's decision on suitability to lease.

A Word on Lease and Deed Restrictions

Because DOE is the owner, there are often lease requirements or conditions that govern the facility that is leased. Some of the requirements are needed because the property belongs to the federal government while others are necessary because of the contaminated nature of the site or the facility itself. Examples of these restrictions include the need to obtain approvals prior to facility modifications or alterations, a restriction on the use of groundwater, obtaining approvals before making penetrations in the floors or walls, connecting to site utilities, changing operations such that they differ from what was approved in the particular lease space, or entering into posted radiological areas. Regardless of the restriction or the rationale behind it, DOE does not "take credit" for these controls in the risk assessment. This is consistent with the Risk Assessment Guidance under Superfund (9).

PART IV. "ANSWERING THE MAIL" – REPLIES TO QUESTIONS ABOUT RISK

Throughout Reindustrialization's history, we have received questions from a variety of sources on specific lease spaces and lease activities. Over time, our responses have become more "comfortable" because we have been able to anticipate the questions and we have answered similar questions before for others. In reflecting on the questions asked, virtually all of them regarded radiation and its risks. Questions from other than the tenants and the regulatory community were rarely about risk; instead they were about liability.

The Regulatory Community

The regulatory community has worked with DOE and asked questions about Reindustrialization since the program began. Many questions were more about policy than about risk, unless the highest tier of risk was considered, namely, why is DOE leasing buildings at a contaminated site when its priority should be on risk reduction. (Those policy questions are outside the scope of this discussion, but they have been satisfactorily addressed over time with face-to-face meetings and by expanding discussions on how certain conclusions were reached.) Questions about risk from the regulators were initially generated because they were reviewing documents that contained information they were not used to evaluating that did not rely on the straightforward, formulaic approach of a typical CERCLA document.

Many of the comments received from the regulators on the leasing documentation were directed to the need for more discussion on how something was calculated or the basis for a decision such as the isotopic distribution in a particular building. Once DOE provided more detailed information on how risks and doses were calculated, the comments on the documents decreased dramatically. There was no disagreement on what was done; just that the documentation of how it was done - its transparency - was not fully explained in a way that could enable the reader to independently reach the same, or a similar, conclusion.

Tenants

Tenants by far have had the most questions, especially the tenant employees who occupied the lease space itself. One of the most desirable buildings at ETTP is the K-1401 maintenance shop. It is a very large building, over 44,128 m^2 (475,000 ft^2) and has housed a variety of DOE operations from equipment maintenance, machining, carpentry, to research and development and materials testing. Some of these operations involved hazardous materials such as solvents, or use of oils with PCBs, as well as work on radiologically contaminated machinery. Because contaminated equipment was worked on in K-1401, fixed radioactive contamination can be found in leased portions of the facility.

The presence of radioactive contamination requires radiological postings be prominently placed in the facility. The facility postings, in addition to the painted floors or other surfaces where contamination has been "fixed" in place, have been the primary generators of questions. Another source of questions occurs when a tenant proposes to conduct work in a posted or restricted area, such as in the overhead areas. A process is in place that requires a review before the work is done to ensure that it is done safely, that building drawings are reviewed to see if any utilities could be affected, that modifications to essential services are not compromised, etc. Work in the overhead areas is preceded by a radiological survey of the surfaces involved to ensure that contamination is not present that could be encountered by those doing the work, for example, changing out 50 year old light fixtures and replacing them with modern units. Those instances of radiological surveys prior to conducing "routine" work generated questions such as Why are surveys needed?" "Is it safe to be in the building when the work is done?" "Will contamination fall on people when the lights are changed?" "What can happen to us from working in a place like this?"

There was more than one occasion when reactions to the postings caused alarm. Tenants' customers or suppliers would come in to see their space, or to make deliveries, have business meetings, etc. and they would see the postings advising of the presence of radioactive contamination. A common question from

those unfamiliar with radiation would be "Where is the nuclear reactor"? Clearly, additional communication was needed.

Insurers, Financiers

Insurers and financiers have been involved in leases at ETTP as well. It should be noted that while business risk and operational risk are of interest to both insurers and DOE and CROET, they are not within the scope of the risk evaluations that are conducted for either leasing or transfer. Business risks are considered by CROET in terms of "Is this a viable tenant?" DOE considers operational risks when evaluating the facility safety basis where a tenant activity will be occurring. Other operational risks are solely the responsibility of the tenant and their support organizations to evaluate. Insurers initially had difficulties because they were not comfortable that the established baseline adequately protected their potential insureds; risk was never a concern since they were in the business of providing nuclear insurance. The insurance companies were most interested in how they could "draw the line" between existing contaminants and any that they might add. DOE was concerned about this as well because a contamination incident that involved similar radionuclides to DOE's would most likely be attributed to DOE regardless of the source. In those cases, we advised the tenants to establish their own baseline, or to "shadow" our staff as they conducted research and surveys, as a form of due diligence on their part. When faced with the cost of baselining or the time involved, the companies eventually suspended the lease process.

Questions from the financial community always revolved around "Is it clean"? When they asked the question they always meant "pristine". In trying to explain terms like "background values", "background radiation" and "site background" it was always a challenge since their point of view was very black and white and they were not familiar with risk-based clean up, acceptable risk, statistical levels of confidence or the terms inherent to the risk assessment process. Further, the risks they were interested in were not those concerned with human health or the environment, but instead were focused on liability. Making the distinction between "clean under CERCLA" vs. "clean" has also been a challenge to explain. Because of technology and the capability of modern detection equipment, even very low levels of contamination can often be detected, thus enabling a risk assessor to calculate a risk number (even at very low risk). Because a number could be calculated, then there was always a "risk" still to be found in a facility. It is always hard to explain to a non-scientific community that the one-in-a-million chance of contracting cancer (incidence, not death) is a "reasonable risk" when compared to other environmental hazards, according to EPA and the regulatory community.

IV. COMMUNICATING THE FACTS

As noted above, the questions posed by bankers and others really did not involve risk but involved liability. Technical responses to those questions were always provided. Our primary mission with regard to risk communication was and remains in the addressing of questions from tenants who have genuine concern about the risks associated with their occupancy of leased space at ETTP.

Written Communication

In situations that required formal responses, such as to questions posed by the regulatory community or by tenant's consultants, DOE and their support team developed written replies. Given the audience – a technical community – the responses were direct and clear. We intended them to be responsive and not create additional "openings" for uncertainty. Some comments posed by the regulators could never satisfactorily be answered by DOE because of the philosophical difference in approach regarding Reindustrialization. DOE continually did their best to provide responses to those questions that were a matter of "policy", but the questions continued to be asked. The replies to the policy questions, not surprisingly, were best answered in person. However, the questions were not so much answered as they

were evolving into the basis for ongoing conversations where the parties wanted to understand (and try to understand) each other's point of view.

Casual Communication

When tenants first appeared at the site they were a "curiosity". People who were not tenants would "visit" and strike up conversations. If tenants were to ask about the building, for example, the "visitors" would say, "Ooh - there's nothing to worry about". This did little to answer any questions. Others would talk in "technospeak" using all sorts of radiological terms that were unfamiliar to the tenants and did not help the situation. Others would use comparisons to things that were "really bad" as if to say that your space isn't so bad. That kind of relativistic response did not help.

Presentations upon Request

Some tenants asked for "briefings" to answer their questions as a group. As stated earlier, the questions revolved around radiation. We welcomed the opportunity to talk with them and asked our radiological control technicians and their staff to support us. The technicians would show the tenants the equipment, explain what it was used for, use it in their space and interpret the readings, and calmly transmit the information.

With certain companies the primary individuals in contact with DOE were knowledgeable enough about radiation to answer their employee's questions. Yet we found that more often that not the employees wanted to hear it from someone outside of their organization. Tenants appreciated the presentations because people were taking the time to pay attention to their concerns. Listening and answering, but mostly listening…

Tailored Written Information

People listening to other people's concerns, noting them and making a list or a mental note about them gave us a starting point to work with. We wanted to answer their questions cohesively, in common terms and in a user-friendly manner. We noticed a trend in the type of questions and knew that what people needed was something that they could understand and plausibly, comfortably, explain it to others. This was the seed that grew into the "Risk and Dose Associated with Occupied Space" reviews, or simply "Fact Sheets".

For the members of the Reindustrialization program, one of our most important CERCLA responsibilities is to keep the public informed and engaged in our activities. DOE has held many public meetings to explain activities at ETTP, and technical experts have made presentations at those meetings and have been available for questions both during and after meetings. Many sessions on Reindustrialization have occurred at public information sessions, stakeholder meetings conducted pursuant to CERCLA, meetings involving the future use of ETTP, as well as during the National Environmental Policy Act (NEPA) process reviews of various program initiatives including those held specifically to discuss Reindustrialization NEPA reviews.

For the Reindustrialization program, DOE wanted to communicate what the dose and risk were for workers in a specific leased building or area, and they wanted to communicate the information so that a non-technical, average worker could understand it and put the risk in perspective. Many of the leasing company's staff had questions and concerns about the facilities they were working in at ETTP. As a result, a series of "Risk and Dose Fact Sheets" has been developed that concentrate on the risk from radiological contamination and also discuss risk from other contamination at the lease space, such as chemical contamination, (e.g., PCBs and asbestos) if applicable. Results from facility-specific risk assessment documents are "translated" into easy-to-understand information. An example Fact Sheet is shown in Figure 3. The main concern of workers was the radiation aspects of the facilities; thus the main focus of the risk and dose fact sheets involves education and risk communication concerning radiation.

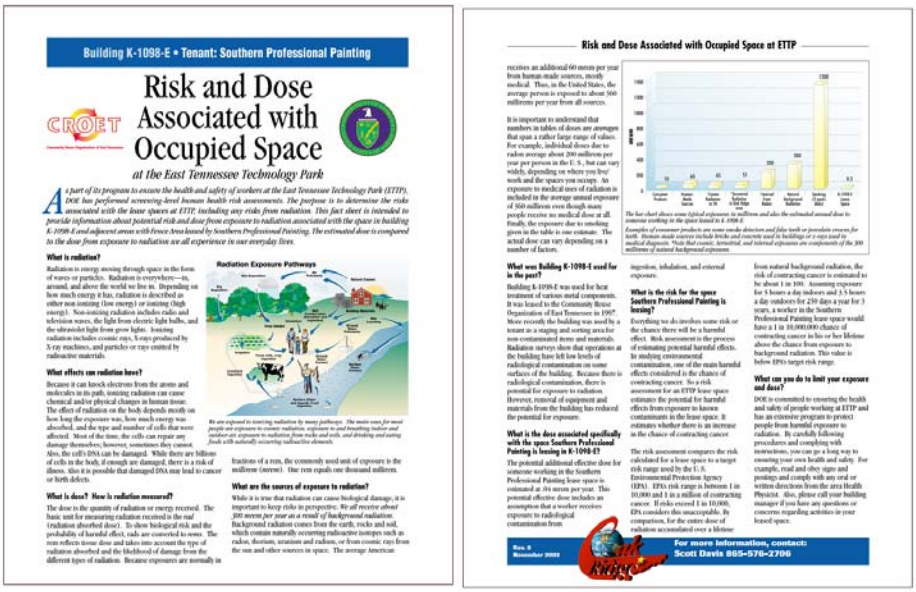

Fig.3. Example of a Risk and Dose Fact Sheet

The approach for the fact sheets was to answer a series of questions on the topic of radiation:

- What is radiation?
- What effects can exposure to radiation have?
- What is dose?
- How is radiation measured?
- What are the sources of exposure to radiation?
- What is the average exposure for people in the United States?

A figure is included in each fact sheet that shows radiation exposure pathways to assist in explaining some of these concepts.

This refresher is followed by information about the specific building being leased and risk and dose:

- What was Building ABC used for in the past?
- What is the dose associated specifically with the space Company XYZ is leasing in Building ABC?

- What is the risk for the space Company XYZ is leasing?

- What can you do to limit your exposure and dose?

A bar chart presents some typical exposures—from consumer products, human-made sources, cosmic and terrestrial radiation, radon, smoking cigarettes—and also the exposure associated with the building being leased. This specifically tailored information has been very favorably received. Most of the information was developed using other public sites discussing radiation. Knowing that the information was already in the public domain was helpful in choosing what to present; there were many options and examples. Experience in writing for the public and for outreach programs assisted knowing what to present and how much could usefully be included in a two-page fact sheet. DOE takes the additional time to look at the information on the particular lease space so that they have risk information answers for each unique lease situation.

The section of the fact sheet that is key to communicating risk and putting risk in perspective for the reader answers the question "What is the risk for the space Company XYZ is leasing?" It contains risk information that is quite difficult to explain in simple terms. The challenge is twofold: 1) how to select enough information to make a good explanation without providing too much for the reader to absorb and 2) how to present the information so it is accurate without being too technical for the reader.

The section begins by explaining that risk assessment is the process of estimating potential harmful effects. It then focuses on the purposes of ETTP risk assessments for the reader by explaining that the risk assessment for an ETTP lease space estimates 1) the potential for harmful effects from exposure to known contaminants in the lease space and 2) whether there is an increase in the chance of contracting cancer. The fact sheet compares the risk calculated for a lease space to EPA's target risk range for industrial spaces such as ETTP, i.e., E^{-4} to E^{-6}. However, instead of using scientific notation, the fact sheet presents the range in terms the reader can readily understand, i.e., between 1 in 10,000 and 1 in a million of contracting cancer. The fact sheet then presents the risk calculated for the lease space and the scenario used for the risk calculations in terms of hours per day, days per year, and number of years in the lease space. The fact sheet also compares the EPA risk range with the risk of contracting cancer for the entire dose of radiation accumulated over a lifetime from natural background, estimated to be about 1 in 100. This information is crucial because it enables the reader to understand what his or her *additional* risk is estimated to be. The fact sheet also reminds the reader that the risk for the lease space is the risk above the chance of contracting cancer from exposure to background radiation. Finally, the fact sheet stresses that following procedures and instructions can limit exposure, and it provides a contact for the reader who has questions or concerns. There are a myriad of other applications for fact sheets such as these and DOE has been approached about these a number of times by other government agencies with risk management responsibilities.

To view these fact sheets, please go to www.ettpreuse.gov and click on tenants. There is a fact sheet for each tenant listed.

Recommendations and Lessons Learned

1. Communicating throughout the lease process is critical. It is not enough to meet with a potential tenant, or any customer or client, set off to determine the baseline conditions and calculate risks, and say, "we'll be in touch". That period of time between meeting with the tenant and a lease signing needs to have periodic progress updates and summaries of intermediate conclusions if for no other reason than to develop a means for open communication. The opportunity for open communication will bear fruit especially if questions or concerns arise in the future.

2. Don't treat "the tenants" (or any client) as an archetype. Each tenant company is unique and each individual within a company is unique. Tenants will tell you what they need to know either directly or

indirectly. A student of body language often can tell the difference between what someone is asking or asking for and what it is he or she really wants or needs to know.

3. Recognize that the process of preparing the environmental baseline and risk analysis documentation isn't *that* process at all; instead it is the continuous process for communicating information using various means to multiple parties. Everything involved in a lease or a transfer needs to be transparent and able to be independently duplicated. The way to ensure that that is attained includes communication. In many cases it involves "teaching", i.e., walking others through the steps until they can understand what was done. They may not agree, but they will be able to say they understand. Not agreeing on the policy level can be an uncomfortable position between parties.

4. Tenant employers have the responsibility to their employees when it comes to communicating with their employees. Trust is an integral part of any relationship, be it a marriage or an employment contract. If a tenant employer shares information about locating at a site like ETTP or any site with an industrial history with their employees early – before a move is made – it will be of great benefit. The tenant employer has a responsibility to ask questions up front on behalf of its employees, so that they themselves can learn and gain assurance, and so they can in turn share it with those in their organizations.

5. As the contractor or consultant at the leading edge you may have a lot of knowledge about the particular subject. But - always start from the beginning. Don't assume that because you have been doing an environmental risk analysis or management job for several years that everyone knows the history you do. While new tenants will benefit from your knowledge base and past experiences specific to their concerns, they are not familiar with it. Answer their questions from their point of departure, not yours. Bringing someone "up to speed" can happen more quickly and smoothly if you both start at the same place. Starting them too far ahead can result in a relationship that may feel awkward and intimidating to the party with the questions.

Conclusions

In Reindustrialization we have found that listening to people's questions is the key to developing responsive replies. We recognize that providing too much information can be intimidating and overwhelming while too little is insulting. Fact Sheets are useful, but personal communication is a key part of using the word "Fact". Sharing information openly is essential and explaining how we reached the conclusions we reached, even if it is difficult discussion material, is worth the effort. General explanations of the risk material to all of the individuals working in the Reindustrialization program have also taken place so that they, too, are comfortable with the material. Each staff member may not have risk assessment skills but each can say, " I don't have the answer for you, but I know someone who does and they will get back to you as soon as possible." As with so many things, listening is the most important thing we can do.

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