

Stakeholder Engagement in Nuclear Waste Cleanup at Existing Nuclear Sites – 26408

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ABSTRACT

This study examines stakeholder engagement in the context of the U.S. Department of Energy's (DOE) Collaboration-Based Siting (CBS) process for spent nuclear fuel (SNF) management, focusing on how residents near the Savannah River Site (SRS) evaluate and respond to nuclear-related information. Forty-four semi-structured interviews with community stakeholders across seven counties were analyzed using thematic analysis. Findings show that residents assess SRS information through four interconnected processes. First, community members struggle to access and interpret available information, describing reports, meetings, and online materials as dense, technical, or difficult to locate. Second, residents interpret nuclear issues through place-based experience, linking site information to local histories, water concerns, and community health patterns. Third, trust is shaped through relationships rather than institutions; participants rely on workers, pastors, neighbors, and local leaders to validate or interpret official information. Finally, practical constraints—including work schedules, caregiving responsibilities, and limited awareness of engagement opportunities—affect whether residents act on or participate in site-related discussions.

These findings highlight opportunities for DOE to strengthen CBS efforts by aligning communication with lived experience, partnering with trusted local intermediaries, clarifying participation pathways, and acknowledging community history. Implications for national nuclear waste facility siting and long-term engagement strategies are discussed.

INTRODUCTION

The Department of Energy's (DOE) management of spent nuclear fuel (SNF) brings a complex set of technical, political, and social challenges to an intersection. In particular, engagement and communication with stakeholders regarding SNF storage presents challenges in the context of the current era of complex information ecosystems. Against this backdrop, the DOE Office of Nuclear Energy's Collaboration-Based Siting (CBS) process emphasizes partnership and engagement with communities in making long-term decisions regarding the siting of SNF storage facilities. Therefore, understanding the information needs of the community, particularly related to how stakeholders decide what sources to trust or not, is relevant to encourage participation and build long-term trust with local communities.

This study reports on the findings from qualitative interviews community stakeholders in the area around the Savannah River Site (SRS) near Aiken, South Carolina. As this work is focused on assisting the DOE with developing its CBS process for siting radioactive waste management facilities, this work focused on the importance of recognizing risk interpretation in the building of trust, the ways stakeholder engagement is based in community networks, and how meaningful participation in collaborative processes are supported by trusted local intermediaries. Thematic analysis showed how these enabled or constrained community engagement in the areas surrounding SRS.

Risk Communication and Trust

Public responses to nuclear risk are shaped by scientific uncertainty, credibility, perceived control, and local experience, among other factors. Uncertainty, especially uncertainty focused on long-term hazards (such as

groundwater contamination or radiological exposure), can heighten concern when residents perceive a lack of relatable or credible information. At the same time, it is critical to recognize that interpretations of risk are not based on technical data alone; stakeholders often rely on ‘lay epidemiology,’ drawing connections among illness patterns, unusual odors, water quality, and local stories to assess official claims [1]. These place-based interpretations are reinforced through environmental memory and industrial memory, where past incidents, remediation efforts, and local histories shape how new information is judged [2]. Place attachment and collective identity influence whether official assessments are accepted, questioned, or reinterpreted.

Trust is a major factor shaping how individuals evaluate hazards and act on recommended behaviors in risk contexts. Higher levels of trust in authorities—including hazard managers, regulators, or operators—tends to reduce perceived risk and increase acceptance of controversial facilities or technologies [3]. In nuclear settings, trust in operators and regulators predicts acceptance of reactor restarts and other nuclear projects, often more strongly than factual knowledge, especially among less motivated or less informed publics who rely on trust as a heuristic [4]. Studies of trust further show that higher trust correlates with lower perceived risk and greater compliance with environmental regulations and mitigation measures [5]. Trust also functions as a dynamic dependent variable that is strengthened—or eroded—through communication practices, perceived fairness, transparency, and broader media environments [6]. In technological risk communication, relational qualities such as openness, caring, fairness, and value similarity are often stronger predictors of trust than technical expertise alone [7]. This work demonstrates that trust is not merely an input to risk communication but an outcome of communication quality, interpersonal credibility, and the social contexts in which residents encounter nuclear information.

While trust and risk interpretation shape how residents evaluate nuclear information, these judgements do not occur in isolation. They unfold within broader engagement environments where residents encounter, discuss, and negotiate meaning through both formal participation opportunities and informal community networks. These engagements lead to a second body of work focused on how stakeholder engagement is structured and evaluated in nuclear and environmental contexts.

Stakeholder Engagement Anchored in Community Networks

Traditional models of effective engagement, such as those promoted by the International Atomic Energy Association (IAEA) or Nuclear Regulatory Commission (NRC), emphasize inclusivity, transparency, trust-building, and analytic-deliberative processes [8]. This means that effective engagement requires more than information provision; it requires relational trust, shared values, clear decision-making processes, and communication that resonates with local knowledge and lived experience. Research shows that trust is shaped through interpersonal relationships and locally embedded social networks [9]. Moreover, residents often rely on community intermediaries such as clergy, librarians, local health workers, and neighbors to interpret, validate, or challenge official information [10]. For example, community volunteers, neighbors, and peers often serve as highly trusted messengers, sometimes more so than government or industry entities [11]. These interpersonal networks become essential pathways through which risk meaning is negotiated.

Previous research has shown that rural and legacy nuclear communities frequently integrate information through interpersonal cross-checking, informal science communication, and trusted messengers, making credible engagement inseparable from these local social infrastructures [12]. The implications of this perspective are notable. For instance, communities in rural areas, effective stakeholder participation strategies would need to incorporate a recognition that interpersonal connections, and specifically trusted local intermediaries, can affect the success of engagement efforts. In this way, it is clear that stakeholder participation is embedded in governance arrangements that determine how decisions are made, how communities are invited to contribute, and how authority is shared. Collaborative and participatory

governance models offer a way to situate these interpersonal and community dynamics within long-term, multi-actor decision processes.

Collaborative Governance and Meaningful Participation

Collaborative governance refers to arrangements where public agencies and non-state actors jointly engage in deliberative, consensus-oriented decision-making processes [13]. In nuclear management, collaborative approaches—including DOE’s collaboration-based siting process—are most successful when they foreground place-based knowledge, cumulative community experience, and the role of informal information channels [9]. These processes decentralize decision-making, emphasize communication across stakeholder groups, and value participation from community members, local and state governments, Tribal leaders, and DOE representatives [14]. The goal is to develop agreements that uphold commitments across host states, Tribes, and communities [15].

Previous research shows that effective participatory processes draw on community intermediaries, social capital, and environmental memory to create space for community members to articulate not only technical concerns but also histories, needs and grievances, and aspirations for continuity [9]. In this context, credibility becomes relational and built through durable interactions and histories of cooperation [16]. For CBS and similar initiatives to succeed, investment in partnerships with trusted local figures, integrate industrial and environmental memory into decision-making, and create communication practices that bridge technical expertise and local knowledge.

Together, prior research in this domain highlights three interrelated dynamics that shape how communities interpret nuclear information and engage with DOE processes. First, risk communication is filtered through local experience; residents weigh technical information against conditions such as water quality, illness patterns, and community histories. Second, credibility is negotiated through formal organizations as well as interpersonal networks, where trusted intermediaries help translate, validate, or challenge official information. Third, meaningful participation depends on whether engagement practices recognize these local knowledge systems, provide opportunities for genuine influence, and build relational trust over time.

The way organizations manage stakeholder engagement, and the interaction patterns that develop, shapes the success and productivity of stakeholder participation in current organizational efforts. These management strategies also influence how these organizations implement community-based approaches for stakeholder engagement in new communities, and in the case of federal agencies, there are implications for how these approaches affect the management of health and safety for present and future generations. This study, therefore, examines how residents living in proximity to the DOE’s Savannah River Site (SRS) interpret nuclear-related information, assess trustworthiness, and link these assessments to local experiences and concerns. The research is guided by two specific research questions:

RQ1: How do residents in communities surrounding a nuclear site engage with information related to nuclear energy and waste?

RQ2: How do residents connect nuclear-related information to experiences in their own communities?

METHODS

Research Design

A stratified purposive sampling method was used [17]. This kind of sampling procedure ensures representation from different groups will be present in the dataset and facilitates comparisons between

groups. Participants had to be at least 18 years of age and reside within the counties within a 100-mile radius the Savannah River Site. Interviews were conducted either in person or online based on availability and participant preference. Participants were compensated with either a \$25 or \$50 gift card to compensate for their time and contributions to the research.

Data Collection

Forty-four semi-structured interviews were conducted between September 2024 and August 2025 with community stakeholders from the Savannah River Site region. Participants included local leaders, current and former advisory board members, and residents. Interview questions were semi-structured and open-ended, meant to loosely guide each interview to enable the participant's grounded reflections and to elicit detailed thoughts [18]. Interviews lasted 30–60 minutes, which resulted in 495 pages of transcripts that went through thematic analysis.

Participants represented the community surrounding the Savannah River Site including from Aiken (n = 13, 30%), Richmond (n=8, 18%), Columbia, Burke, or Allendale (n = 8, 18%), Bamberg (n = 6, 14%), and Orangeberg (n = 9, 20%). Counties were interviewed until saturation is reached (Mason, 2010). Twenty-seven identified as female (61%) and 17 identified as male (39%), with 22 participants identifying as White (50%), 21 participants identifying as Black (48%) and one identifying as Hispanic (2%). Participant ages ranged from late 20s to late 70s, with the average age being 46, and represented a variety of professions including: higher education, insurance, nonprofit, community health worker, news media, local advocate group, manufacturing worker, and retired. See Table 1 for Participant Information.

Table 1. Participant Information

Number	County	Role	Age	Gender	Ethnicity
Participant 01	Aiken	News Media	30	Male	White
Participant 02	Aiken	Community Organizer	40	Female	White
Participant 03	Aiken	Former CAB	70	Female	White
Participant 04	Aiken	Business	60	Female	White
Participant 05	Aiken	Higher Education	30	Male	White
Participant 06	Aiken	Higher Education	50	Male	White
Participant 07	Burke	Contractor	40	Female	Black
Participant 08	Aiken	Higher Education	60	Male	White
Participant 09	Aiken	Retired	60	Male	White
Participant 10	Richmond	Mental Health Counselor	70	Female	White
Participant 11	Richmond	Self-Employed	40	Female	Black
Participant 12	Aiken	Former CAB	70	Male	White
Participant 13	Bamberg	Business	20	Female	White
Participant 14	Allendale	IT	40	Female	White
Participant 15	Aiken	Nonprofit	30	Male	White
Participant 16	Richmond	Retired	40	Female	White

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Number	County	Role	Age	Gender	Ethnicity
Participant 17	Aiken	Business	60	Male	White
Participant 18	Richmond	Retired	30	Male	Black
Participant 19	Orangeberg	Former CAB	50	Male	Latino
Participant 20	Aiken	Public Service	60	Male	White
Participant 21	Richmond	Business	40	Male	White
Participant 22	Richmond	Religious	50	Male	White
Participant 23	Columbia	Community Organizer	60	Male	White
Participant 24	Aiken	Financial	40	Male	White
Participant 25	Richmond	Higher Education	60	Female	White
Participant 26	Richmond	Higher Education	60	Female	White
Participant 27	Allendale	Nonprofit	40	Female	Black
Participant 28	Orangeberg	Health Worker	30	Female	Black
Participant 29	Allendale	Community Health	70	Female	Black
Participant 30	Orangeberg	K12 Education	40	Female	Black
Participant 31	Allendale	Community Health	40	Female	Black
Participant 32	Allendale	Retired	70	Female	Black
Participant 33	Allendale	Retired	70	Male	Black
Participant 34	Bamberg	Community Health	30	Female	Black
Participant 35	Bamberg	Retired Veteran	70	Female	Black
Participant 36	Orangeberg	Artist	40	Female	Black
Participant 37	Orangeberg	Retired	60	Female	Black
Participant 38	Orangeberg	Health Worker	30	Female	Black
Participant 39	Orangeberg	Graduate Student	20	Female	Black
Participant 40	Bamberg	Manufacturing Worker	40	Female	Black
Participant 41	Orangeberg	Community Health	20	Male	Black
Participant 42	Bamberg	Federal Worker	50	Female	Black
Participant 43	Orangeberg	Manufacturing Worker	30	Female	Black
Participant 44	Bamberg	Higher Education	30	Female	Black

Data Analysis

We engaged in a thematic analysis beginning with becoming familiar with the data to generate initial codes about ideas or what is interesting about the data (Braun and Clarke, 2006). Next, after the data had been initially coded, we revisited codes to sort them into potential themes and collate data associated with

relevant themes. Next, we revisited themes and associated data to look for coherent patterns between collated data and to assess accuracy of themes generated, whether they should be broken into more themes or collapsed together due to similarities. Once a thematic map of the data was generated, we focused on producing definitions of themes to identify the essence of the themes. Finally, we report the results of the fully analyzed themes and corresponding data. The last phase of the research design is the integration analysis. NVivo software [19] was used to support systematic coding and ensure reliability; three coders worked on the analysis, and intercoder reliability was evaluated at multiple points in the process.

RESULTS

Our qualitative analysis identified four themes related to how community members evaluate, interpret, and act on information (RQ1) and how they connect nuclear-related information to conditions, experiences, and concerns to their community (RQ2). These themes are outlined as follows: a) Accessing and Evaluating Information to Understand SRS, b) Interpreting Nuclear Information through Place, c) Trust Shaped Through Relationships, and d) Practical Constraints on Engagement and Action. Each theme is discussed in the following.

Theme 1: Accessing and Evaluating Information about SRS

The first theme highlights how community members access and evaluate information about the Savannah River Site to better understand site operations. Participants varied in their description of receiving and having access to information about the site, but all participants discussed concerns related to technical or hard-to-understand information about what the site does. First, several participants noted that presentations and reports are detailed but not easily understandable, especially for those without technical training or time to read lengthy documents. For example, Participant 12, a former CAB member and Aiken resident said, “[Reports] are about 300 pages long...Nobody would never get beyond the title. It’s always written in esoteric terms, so it sounds uninteresting and unintelligible...They are not meant for public consumption.” Similarly, Participant 3, also a former CAB member and long-time resident of Aiken County, noted, “People have busy lives. Do they have time to sit there and research so that it make sense? Not really...Are they interested enough to sit down and take several hours to figure out what it all means? No, I don’t think so.” Participant 13, a local Aiken businessman, when talking about invites for potential events for the community stated, “I feel like people might see it and think they don’t need to go or that it will be boring or over the head of the ‘Average Joe’ and not worth their time.” These quotes reflect how community members assessment of opportunities to receive information about the site reinforced that information shared was not always in a format or structure that was easy to understand or to engage with.

Relatedly, participants discussed not always knowing where to locate and access desired information. Most participants talked about starting with a platform such as Google but noted that such pathways often resulted in needing to sift through significant amounts of information to determine what was relevant. Participant 36 was a resident in Orangeberg and said, “I wouldn’t even know where to start to look...would it be the EPA? I wouldn’t know where to start.” Many participants expressed a similar kind of overwhelmed feeling and a number noted that they often did not know where to start to get information. However, there were some participants that lamented the lack of direct connection to the DOE, either in the form of a document library that is accessible to the public or a point of contact. Participant 1 was in local media and said, “There’s no back channel [to verify] information so you’re dependent on the DOE...and that process to get information is not always timely or forthcoming.” Participant 4 was a businessperson in Augusta and similarly lamented a point of contact by saying, “The everyday person has no point of contact. There aren’t any great sources of information out there, and you’re limited what you will find on the web.” Another participant who works as a community organizer in the Aiken/Augusta community said, “The DOE has no document library...They may have a website and link to certain documents, but they don’t post stuff...They don’t have a system for public requests. It’s haphazard at best.”

Taken together, these findings from the thematic analysis illustrate how residents evaluate information and attempt to navigate through the complexity of the current information ecosystem. These accounts show that residents evaluate nuclear information by how accessible it was, both in terms of how understandable it was to a lay person and knowing where to access it. Materials are often perceived to be complex, scattered, or uninviting and where meetings are not designed to fit within everyday schedules. Official communication is often seen as offering information but not in a timely or forthcoming way. The perception of complexity shapes how community members judge the credibility, usefulness, and relevance of information about SRS.

Theme 2: Interpreting Nuclear Information Through Place

The second theme that emerged from the data focused on how community members used their knowledge of their community to interpret nuclear information and to decide how best to utilize that information. Across interviews, participants rarely interpreted nuclear information using technical concepts alone. Instead, participants understood SRS and nuclear activities through local histories, visible environmental conditions, and patterns of health concerns in specific counties and neighborhoods. Residents drew on Cold War-era stories about “the bomb plant.” For example, a local businessperson in the Augusta area, Participant 4 said, “In terms of the community, it’s always been known...we call it the bomb plant...For the underserved population, it doesn’t mean a whole lot outside of the stories that they have heard...It’s industry, it’s other, it’s secretive...So, I think nuclear gets captured in that mindset.” In this way, the contextual framing of the history of the site shapes the discussions about the information that is shared.

Moreover, information shared regarding SRS is often entangled in local stories of industrial pollution, ongoing water concerns, and experiences of chronic ailments. Participant 31 was a community health worker in the Bamberg and Allendale counties and was aware of community conversations related to water concerns. She said, “We have health issues, ongoing water issues in Bamberg County...that also brings up the concern of nuclear because some communities are more linked to SRS...it brings up questions of why these areas have water concerns and quality of life concerns...it is all tied together.” Participant 31 went on to say, “Sometimes in your community you just see a problem but you don’t know the reason behind it and you don’t know how that may be linked to [nuclear]...all you know is that something is just not right.”

Similarly, Participant 44 was a resident of Bamberg county before moving to Orangeberg and worked in higher education. She asked, “How far can you live from a nuclear plant? Or what things do you need to know, how do you protect yourself...These plants are becoming more plentiful...How do we protect ourselves?” Participant 23 was a long-time resident of Richmond County. She brought up white cards, which is a Medical Benefits ID card that is part of a healthcare entitlement program created “compensate workers that become sick as a result of their involvement in the production of nuclear weapons” [20]. She said, “Everyone in town knows what a white card is...You’ll see billboards when you ride around, mostly for nursing facilities, that say, ‘If you have a white card you can come here for free.’”

These place-based interpretations show how community members connect nuclear information to the specific community context within which they reside and use the history of the place to frame understanding of information. Collectively, these accounts show that nuclear information becomes meaningful only when residents can link it to their own surroundings – to local water systems, health histories, and land use. Where those links feel uncertain or unexplored, concerns about SRS and nuclear activities are sustained through stories, observations, and long-term environmental memory rather than technical data alone.

Theme 3: Trust Shaped Through Relationships

The third theme emphasized the importance of relationships in the building and sustaining of trust. Participants described relying first on people they know – retired workers, neighbors, community leaders,

clergy, and local organizations – to make sense of SRS and nuclear information shared about the site. For many, having a personal connection to someone who works at the site or in related roles was more important than formal communication channels or social media information. Participant 43 was a blue-collar worker in the Orangeberg area; she said, “I mainly know some of the community people who work to bring the community together...so if they post something [on Facebook about the community] then 10 of our 10 times I’m going to believe it’s true because they actually work for the good of the community.” Likewise, another participant, a long-time resident of Aiken county, said of DOE communications with the surrounding communities: “There’s got to be somebody that the community trusts, and I don’t mean trusts on the issue but trusts that they build a relationship...when [the DOE person] come to talk to the community, the [DOE person] is sincere with what they are saying.” This same participant pointed out that although there are complexities in how the DOE is structured, the general public, “Thinks of it as one organization...But who represents ‘the one organization’? There is no such person.” These quotes show the importance of either having an existing relationship or knowing a person who can be that bridge.

Many participants acknowledged knowing someone who either currently works at the site or has in the past. Everyone who had this connection talked about going to that person to ask questions. Participant 3, who was a former CAB member, said, “I have friends that work out there and some neighbors. So if I need something answered, I just see them and I’ll ask. If it’s public information, they can tell me.” Participant 19 is also a former CAB that lives in the Augusta area: he said, “My pastor worked out there...someone asked him a question and he said he couldn’t answer that. It was such a quick response. I thought it was funny, after all these years it’s still his response.” Participants who had relationships with current or former site workers also acknowledged that not everything can be shared. However, for participants who had relationships, this secrecy was not described in a way that was suspicious but rather a part of working on the site.

These perspectives inform the analysis of the first research question by demonstrating ways in which trust is negotiated relationally: residents depend on familiar intermediaries to interpret nuclear information. These accounts further inform understanding regarding the second research question by showing how trust evaluations are grounded in community experience rather than official authority. Community members evaluate official information through the consistency, visibility, and sincerity of specific people who show up in their communities.

Theme 4: Practical Constraints on Engagement and Action

The final theme that emerged from the dataset focused on how participants described varied ways they act, or chose not to act, on information about SRS. Across counties, many of the interview respondents said they rarely hear about opportunities to learn more or participate in meetings. Even when events are advertised, everyday constraints like commuting long distances, working full days, evening meeting times, and lack of childcare make it difficult for residents to attend. For example, Participant 40 grew up and continues to live in Bamberg county but works in Orangeberg 7:00am to 7:00pm. She said, “I have three kids and I commute and I work 7 to 7, so when I get home I wash and lay down.” Growing up in the area she knew of the site and remembered learning things in school about nuclear, but was not aware of current opportunities to engage.

Participant 15, a nonprofit worker and resident on the GA side of SRS, confirmed these barriers when she said, “We used to have our events, especially at night, that had daycare and we used to have food and things because these meetings are happening at 5:30pm on a Tuesday or Thursday. For our county, people commute to work because there aren’t a lot of jobs here. So, there are barriers.”

Overall, these insights inform the analysis of the first research question by explaining when and how residents act, or not act, on nuclear information. These quotes suggest that low visible outreach, meeting

design, and everyday life constraints limit community members' ability to engage, even when they are curious or concerned. Also, these results help to shape the analysis of the second research question by highlighting how daily realities shape the way community conditions influence participation and engagement. In practice, many encounter SRS as something that affects jobs and the region but remains distant from their day-to-day decisions about participation.

DISCUSSION

In summary, findings from the analysis of interview data collected in this study reveal that residents living around the Savannah River Site evaluate and interpret nuclear information through a combination of information accessibility, place-based experiences, interpersonal trust, and the realities of everyday life. Even when DOE information is available, community members often experience this information as being too dense, specialized, or time-consuming to evaluate. Therefore, they form judgements through layered interpretations, combining fragments of official reports with community memory, conversations with local intermediaries, and lived observations.

This suggests that risk interpretation does not occur in isolation but rather in interrelated information systems. Community members are not just passive recipients of technical information but active interpreters who combine information systems such as personal networks, local histories, and personal experience with official materials to make sense of nuclear issues and to interpret shared communication.

These personal experiences are not to be overlooked or discounted as they play a major role in how community members interpret SRS. Rather, it is through shared community histories with issues such as water quality, illness stories, industry legacy, land use, and economic patterns that nuclear information becomes meaningful. The findings indicate that what community residents "know" about nuclear is inseparable from what they observe in their environment and what their community has experienced over time.

Moreover, community members assess credibility through people, not agencies. Community workers, pastors, local businesspeople, and long-time neighbors serve as guides, validators, and interpreters of DOE information. Official communication, therefore, is judged through whether people show up consistently, communicate sincerely, and are known to the community. Trust, therefore, is grounded less in official authority and more in the relationships. Personal ties and local leaders provide a trusted bridge connecting DOE information to lived experiences.

These findings have several implications for engagement with community members, such as that enacted in the DOE's CBS approach. Further, there are implications for ongoing efforts to build trust, improve transparency, and strengthen community partnerships. First, communication strategies need to align with local experience. Since community members make sense of nuclear issues through water, health, and land use, communication that ignores this lived reference points may feel incomplete or unrelatable to community members. This means official communication should provide localized explanations with explication for what this tangibly means for residents. Second, community members rely heavily on community members as trust information bridges. Therefore, these trusted members can act as formal partners in outreach as these members can amplify communication or help translate complex information. Therefore, building advisory relationships with local pastors, librarians, health workers, former site workers, and community organizers is recommended. Relatedly, pathways to participation for community members should be visible, simple, and designed for community schedules. Community intermediaries can be used as important information sources to design engagement opportunities that best fit the community itself.

Finally, as nuclear information is entangled with local industrial histories, it is important to address the environmental memory of communities. Historical incidents shape present interpretations. Developing communication that does not avoid local histories but responds to long-standing concerns and their emotional weight is essential.

Beyond the SRS context, these findings offer broader lessons for nuclear communication, site management, and community engagement in legacy and future facility settings. First, nuclear information must be both technically sound and socially grounded. This means that technical accuracy alone will not shape public understanding if information is not relatable. Risk communication should integrate community context, lived experiences, and common concerns. Second, national policy frameworks for CBS and nuclear waste management should recognize that informal messengers like workers, clergy, and neighbors often carry more weight than formal outreach. Finally, long-term engagement requires relational continuity, not episodic outreach. This means that a sustained federal presence in communities should build on familiarity, consistency, and the interpersonal trust these findings show to be essential.

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