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MS. LONG: Good afternoon. My name is Lorell

6 Long and I'm with the California Community Health
7 Advocates. I'm very happy to be here this afternoon,
8 even though it was very difficult to get here. I am
9 from one of the only communities on the planet that had
10 the good sense to vote out their nuclear power plant at
11 Rancho Seco near Sacramento. We limited our comments
12 to what we actually found in the words of Department of
13 Energy and I'd like to read that for you.

14 After reviewing your Draft Environmental
15 Impact Statement and the Supplement to the Draft
16 Environmental Impact Statement for a Nuclear Fuel
17 Repository at Yucca Mountain, I was struck by the
18 repeated pattern of uncertainty expressed by the
19 authors of these documents, especially in areas of
20 critical public concern. Because the vast preemptive
21 power of the Federal Government concerning nuclear
22 energy leaves citizens no choice but to rely
23 exclusively on the expertise and capabilities of the
24 DOE staff, we believe that uncertainties and
25 contradictions evident in these reports are

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1 unacceptable and put future public health and safety at
2 risk.

3 What do these documents tell us? Of course,
4 we're not scientists or nuclear engineers, but from our
5 initial reading of these documents, here is what we
6 found:

7 Will the engineer design for the repository
8 work? We're not sure, says the report, we're still
9 gathering information. In fact, we think we should put
10 in place a lessons learned strategy during development
11 so that we can continue to change the design.

12 What is known about the site? Evidently not
13 enough. There is uncertainty regarding the influence
14 of heat on water movement in the unsaturated zone, but
15 we're studying it, says the report. There is
16 uncertainty concerning the influence of high
17 temperatures on rock properties. But we're planning to
18 conduct studies of heat on the chemical environment,
19 says the report.

20 Are the waste packages sound? Well, that
21 depends, says the report. Studies show that if the
22 waste package is breached, some radionuclides will be

23 released quickly, others not to quickly. Which ones

24 and how fast, we're still debating.

25 If radionuclides reach the groundwater, do we

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1 know where the groundwater at the repository site goes

2 once it leaves the site? We're debating this one, too,

3 says the report. We can't agree on flow paths. In

4 fact, the alternative concept of flow shows a largely

5 different flow pattern.

6 But, according to the report, this doesn't

7 matter because the current design of the proposed

8 repository relies heavily on the delay of release by

9 providing long-lived waste packages. The long lives of

10 the packages tend to control the dose results.

11 What confidence do we have that the waste

12 packages will have a long life? That depends, says the

13 report, on the confidence we have in the long-term

14 performance of the repository system in relation to

15 groundwater contamination. DOE has modeled this. Some

16 of the variables they think represent impacts reliably,

17 others do not. Some are significant, others are not.

18 Table 5-3 in the Report shows the degree of

19 confidence in the models ability to accurately

20 represent impact of various factors and the
21 significance uncertainty may have on performance.
22 What does it show? That the model cannot be
23 counted on to accurately represent the ultimate seepage
24 into drifts -- confidence, low -- and that the
25 significance of this uncertainty to the overall

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1 estimate of performance is high.

2 Does the model reasonably represent dripping
3 on waste packages? No. Is this important? Well, we
4 think so.

5 What about radionuclide concentration
6 reductions during its transport between the waste
7 packages and environment?

8 Well, not much confidence that the model
9 represent this event -- low. Is this important? Very,
10 according to the Table 5-3. In other words, the very
11 factor DOE is relying on to buffer us from possible
12 groundwater contamination -- the long life of the waste
13 packages -- cannot be sufficiently guaranteed because
14 of the considerable, admitted uncertainty in the
15 behavior of the site characteristics, most notably,
16 how, when and where water will degrade the integrity of

17 the waste packages.

18 DOE staff evidently agrees that this is a
19 problem. They answer with the solution: the drip
20 shield. Another layer of engineering solutions to
21 buffer us from the uncertainties they have not had
22 enough time to clarify or study.

23 CCHA seems to be not the only group concerned
24 about uncertainty. The staff of the U.S. Nuclear
25 Regulatory Commission, the ACNW Working Group on
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1 Chemistry Issues, in their letter on August 13th, 2001,
2 to Chairman Meserve, laid out their concerns as to
3 whether DOE had done enough, as they said, to determine
4 with reasonable expectations that the repository will
5 meet regulatory requirements.

6 In the Working Group report, the concern
7 centered on the corrosion of waste packages and drip
8 shields. The chemistry data, they say, is poor, the
9 results of studies using such data, questionable.

10 They say, "Given the complexity of the
11 in-package chemistry and the importance in terms of
12 radionuclide mobility, DOE needs to better document and
13 support its approach."

14 The NRC Study Group criticizes not only the
15 data, but DOE methods of analysis, claiming that DOE
16 has employed conflicting physical and chemical
17 processes and conditions to model the source of its
18 term release.

19 Critical of DOE staff's approach to the
20 radionuclide release question, they claim it is not
21 clearly discussed and leads to confusion and
22 uncertainty.

23 In other words, the very methodology used to
24 generate models to understand radionuclide source term
25 is flawed and unreliable and leads to conclusions that
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1 cannot be trusted.

2 MODERATOR BROWN: You're at five minutes.

3 MS. LONG: Okay. I have one last thing and
4 we'll be done.

5 In their words -- this is their concern, not
6 ours. This is their concern: Localized corrosion of
7 the degradation of welds are uncertain.

8 The usefulness of DOE's sensitivity and
9 important analyses to understand the most significant
10 contributors to overall risk is questionable.

11 If their analysis is questionable,
12 potentially important complexity may not have been
13 addressed.

14 Abstractions of process model chemistry
15 phenomena does not appear to capture important
16 uncertainties in chemistry which control the release
17 and transport of the important radionuclides.

18 What the group has clearly amplified is that
19 we cannot afford unreasonable answers. We cannot
20 afford confusion and uncertainty and we cannot afford
21 science that leads to conclusions we cannot trust and
22 in which we have no confidence.

23 We continue to believe the public deserves
24 better than a lessons learned strategy for dealing with
25 nuclear radiation safety. We believe that there is

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1 considerable evidence that DOE is on dangerous
2 scientific ground here and it cannot justify its push
3 to approve the Yucca Mountain Project.

4 Thank you.