

1 During the last two years the northern New Mexico Citizens Advisory Board
2 (NNMCAB) has experienced some polarization. Heated discussions amongst Board
3 members have revealed underlying prejudices, both pro and con, with regard to the DOE
4 and its operations. Often, discussions have devolved into assertions about what members
5 of the local community want and think. However, no real evidence has been offered to
6 support these claims.

7
8 Consequently, a formal survey of attitudes held by members of the northern New Mexico
9 community toward DOE-LANL was thought to be advisable. This survey was designed
10 to reflect the debates that have occurred among NNMCAB members, during the past two
11 years.

12
13 The local community being sampled included proportionate numbers of community
14 members from Rio Arriba and Santa Fe counties. Such a survey may help the DOE,
15 LANL, and the NNMCAB staff to better understand the local community in which they
16 live and work^[3]. Moreover, by providing an outlet for the expression of public opinion,
17 the survey may even help to build public confidence in the ongoing cleanup of legacy
18 wastes at LANL. This will be particularly important as actual remediation of the affected
19 sites begins, and more public involvement in the planning for long-term stewardship is
20 sought.

21
22 In truth, DOE-LANL already conducts an annual survey of local attitudes. However,
23 these professionally conducted surveys^[4] have been confined to so-called community
24 leaders; e.g., mayors, city council members, and local businessmen. Such surveys do not
25 really attempt to assess the attitudes of ordinary citizens.

26 27 **Procedure**

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29 The procedure invoked was evolved from an approach which is standard in the polling
30 industry^[5]. The sample size obtained was of 225 respondents, which implies a maximum
31 probable error of 6.7%, with 95% confidence^[6]. As will become clear from the Results
32 section of this report, the differences in average response rates observed were often much
33 in excess of 10% and, therefore, much in excess of the maximum probable error.

34
35 Although the polling industry ordinarily makes use of telephone contacts to obtain its
36 survey results, in the present survey I obtained results entirely through face-to-face
37 contacts. In order to facilitate this process, I chose to set up polling stations in places
38 where a large amount of human traffic would be expected; i.e., in the lobbies of local
39 Health and Fitness centers, during times of maximum usage.

40 41 **Survey Statements**

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43 As described in the Introduction, the statements selected for this survey were suggested
44 by conversations between members of the NNMCAB, over the past two years. The form
45 of the survey, and its statements, were as follows:
46

1 (For each of the following, please circle one response:
2 5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree)

- 3
- 4 1. I believe that local communities have benefited greatly from DOE 5 4 3 2 1
5 operations in New Mexico.
- 6
- 7 2. Money and jobs that the DOE has brought to New Mexico are the 5 4 3 2 1
8 most important factor.
- 9
- 10 3. Radioactive and chemical wastes generated at LANL over the past 5 4 3 2 1
11 60 years are of concern to me personally.
- 12
- 13 4. Radioactive and chemical wastes transported to, and stored at, 5 4 3 2 1
14 the WIPP site are of concern to me personally.
- 15
- 16 5. I worry about present and future DOE operations at WIPP, at SNL, 5 4 3 2 1
17 and at LANL.
- 18
- 19 6. The DOE is a trustworthy organization, and I feel safe knowing 5 4 3 2 1
20 that their operations are located nearby.
- 21
- 22 7. Nuclear technologies developed at LANL and SNL have benefited 5 4 3 2 1
23 New Mexico communities.
- 24
- 25 8. Nuclear weapons technologies developed at LANL and SNL have 5 4 3 2 1
26 made the people of New Mexico more safe and secure.
- 27
- 28 9. Since some managers of the DOE's operations at LANL, SNL, and 5 4 3 2 1
29 WIPP live within local communities, then local citizens
30 need not worry about what the DOE is doing.
- 31
- 32 10. I don't believe that DOE operations are potentially hazardous to 5 4 3 2 1
33 New Mexico's clean air and water.
- 34

35 **Results**

36
37 Surveys were completed by 225 individual respondents, and response profiles for each of
38 the ten statements were determined by averaging over respondents. These profiles
39 exhibited clear differences in the level of agreement, or disagreement, to the individual
40 statements. Isolated written comments offered by respondents appear in Appendix A. The
41 locations and times at which the individual surveys were administered are described in
42 Appendix B.

43
44 Strongest agreement was displayed to the two statements:
45

1 3. Radioactive and chemical wastes generated at LANL over the past 60 years are of
2 concern to me personally.

3
4 4. Radioactive and chemical wastes transported to, and stored at, the WIPP site are of
5 concern to me personally.

6
7 Moderate agreement was displayed to the two statements:

8
9 1. I believe that local communities have benefited greatly from DOE operations in New
10 Mexico.

11
12 5. I worry about present and future DOE operations at WIPP, at SNL, and at LANL.

13
14 Weak, although still significant, agreement was displayed to the statements:

15
16 2. Money and jobs that the DOE has brought to New Mexico are the most important
17 factor.

18
19 7. Nuclear technologies developed at LANL and SNL have benefited New Mexico
20 communities.

21
22 Neutrality of opinion was displayed to the two statements:

23
24 6. The DOE is a trustworthy organization, and I feel safe knowing that their operations
25 are located nearby.

26
27 8. Nuclear weapons technologies developed at LANL and SNL have made the people of
28 New Mexico more safe and secure.

29
30 Finally, disagreement was displayed with the two statements:

31
32 9. Since some managers of the DOE's operations at LANL, SNL, and WIPP live within
33 local communities, then local citizens need not worry about what the DOE is doing.

34
35 10. I don't believe that DOE operations are potentially hazardous to New Mexico's clean
36 air and water.

37
38 Graphs of the profile of these averaged responses appear in the accompanying five
39 Figures. Each Figure contains the profile of the average response to just two statements,
40 where Fig. 1 shows responses to the two statements which evoked the strongest
41 agreement (statements #3 and #4); Fig. 2 shows responses to the two statements evoking
42 moderate agreement (statements #1 and #5); Fig. 3 shows responses to the two statements
43 evoking weak agreement (statements #2 and #7); Fig. 4 shows neutrality of opinion
44 (statements #6 and #8); and Fig. 5 shows disagreement (statements #9 and #10).

1 **Discussion**

2
3 As has been remarked earlier, and as should be clear from Figs. 1-5, the profiles of
4 responses to the ten statements were quite varied, being strongly dependent on the subject
5 being addressed; i.e., on the statement #. These differences are summarized in Fig. 6,
6 where the average response to each statement (average over each profile) is plotted
7 versus statement #.

8
9 Further, after averaging all responses over all ten statements, the overall average response
10 was determined to be 3.25. Hence, since 3.0 indicates "no opinion", or a "neutrality of
11 opinion", I assert that the phrasing of the ten statements did not prejudice respondents
12 toward an overall agreement or disagreement, and was an unbiased survey.

13
14 We next consider implications of the results obtained from the 225 respondents who
15 participated in this unbiased survey.

16
17 More than any other issue touched on by the statements in this survey, the matter of
18 potential radioactive and chemical contamination of the local environment seems to have
19 evoked the strongest feelings amongst respondents; viz., "radioactive and chemical
20 wastes generated at LANL over the past 60 years are of concern to me personally", and
21 "radioactive and chemical wastes transported to, and stored at, the WIPP site are of
22 concern to me personally" (statements #3 and #4), produced strong agreement. Evidently,
23 however, the strength of these feelings was reduced if the threat of potential
24 contamination was located at a more remote site, or was placed off into the future; e.g.,
25 statement #5.

26
27 Respondents also agreed, although with less conviction, that "local communities have
28 benefited greatly from DOE operations in New Mexico" (statement #1), and with still
29 less conviction to the thought that "money and jobs that the DOE has brought to New
30 Mexico are the most important factor" (statement #2). As well, it was felt by respondents
31 to be only somewhat true that "nuclear technologies developed at LANL and SNL have
32 benefited New Mexico communities" (statement #7).

33
34 Interestingly, respondents were either unsure, or of decidedly mixed opinion, that "the
35 DOE is a trustworthy organization, and I feel safe knowing that their operations are
36 located nearby" (statement #6), and "nuclear weapons technologies developed at LANL
37 and SNL have made the people of New Mexico more safe and secure" (statement #8).

38
39 Definite disagreement was shown by respondents to the thought that "since some
40 managers of the DOE's operations at LANL, SNL, and WIPP live within local
41 communities, then local citizens need not worry about what the DOE is doing" (statement
42 #9). Also, "I don't believe that DOE operations are potentially hazardous to New
43 Mexico's clean air and water" (statement #10) evoked strong disagreement; i.e., in accord
44 with the strong agreement of respondents to the closely related statements #3 and #4,
45 which were expressed as a positive.

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1 **Summary**

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Based on these results, it is plausible to say that money and jobs brought to northern New Mexico by the DOE are generally considered to be very important to many of northern New Mexico's citizens. At the same time, however, concerns about pollution caused by the DOE's operations are very worrisome. Often, strong feelings of gratification due to economic benefit, and pronounced worries about pollution, appear within the same individual.

10 There is also evidence of ambivalence toward the DOE's ongoing nuclear weapons
11 program. Although, generally, it seems that strong opinions pro and con about nuclear
12 weapons do not appear within the same individual, definite uncertainty about this issue
13 can still be seen in the views of individual respondents.

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Finally, it seems fair to say that suspicion about the DOE's operations in northern New Mexico is widespread. The fact that many DOE employees live and work in northern New Mexico is, generally, not seen as a reason to be sanguine about the DOE's operations here.

20 **References**

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[1] History of the DOE-EM SSAB; March, 2009; <http://www.em.doe.gov>
[2] Advice and Consent: the DOE's SSABs; Jennifer Weeks, Harvard U.'s Belfer Center for Science, Technology, and Public Policy; Discussion Paper; Sept., 2000.
[3] Tuler, S. and Webler, T.; 2003, SERI Report 03-004; Public Participation in Setting Clean Soil Standards at Rocky Flats; <http://www.seri-us.org>
[4] <http://www.lanl.gov/orgs/cpo/>
[5] Research and Polling, Inc.; Albuquerque, NM; telephone: 505-821-5454.
[6] <http://www.DSSResearch.com>; http://en.wikipedia.org/wiki/Sample_size

36 **Appendix A**

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Comments offered by individual respondents were as follows:
Let the masters of science at LANL focus on climate change, health care, etc.
The powers that be do not reside in, and perhaps do not even visit, New Mexico so why should I believe that they have the health and welfare of New Mexico's citizens in mind? They do not!
I think LANL is good because it gives work to the community and because it is safe.

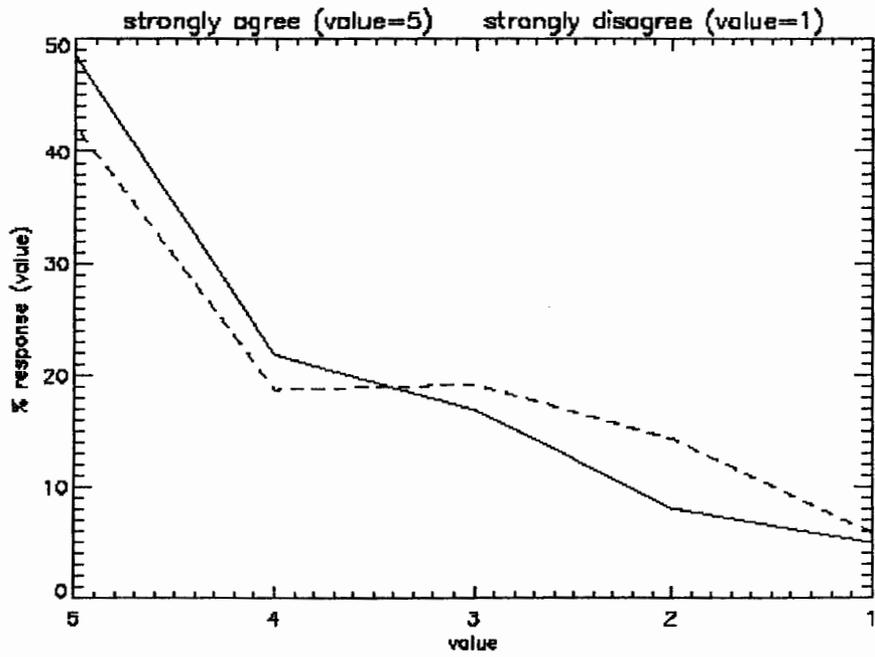
1
2 I believe that DOE does everything in their power and within the law to protect the
3 economy, safety, and way of life in New Mexico, and wherever else they operate.
4
5 Sloppy procedures with radioactive materials at LANL concerns me greatly. I equate the
6 DOE's attitude toward New Mexico with that of the Catholic church's attitude toward its
7 pedophile priests, many of whom it dumped in New Mexico.
8
9 Statement #9 is poorly written. Also, if statement #10 refers to WIPP, then there are other
10 problems that concern me more.
11
12 I am not very familiar with the DOE's operations, and their effect on New Mexico.
13
14 Keep doing good work!
15
16 No more nuclear development in New Mexico please!
17
18 Yucca Mt. is example of DOE's misuse of tax \$. DOE is not credible!
19
20 DOE badly manages tailings and dump sites and inadequately protects ground water.
21
22 LANL has a terrible history of contamination of the ground water.
23
24 I do not consider myself to be well informed about these issues,
25
26 DOE needs to be more efficient at the planning and execution of its work.
27
28 Let's move into the 21st century!
29
30 I hope that those who lost jobs at LANL will get them back.
31
32 Thank you for taking time to conduct this study!
33
34 I'm glad that over 1 million American lives were saved by the Manhattan project.
35
36 If LANL loses funding then I am concerned, otherwise no!
37
38 The cleanup at LANL is necessary, but the research there is questionable.
39
40 Statement #10 is tricky.
41
42 **Appendix B**
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44 Surveys were obtained from respondents at the following locations and times:
45

1 Thursday, Sept. 24, 2009; 9:30AM-11:30AM; Atlas Gym (privately owned facility);
2 Espanola, NM; 18 surveys completed.
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4 Thursday, Sept. 24, 2009; 5:00PM-7:00PM; Lucero Fitness Center (publicly owned
5 facility); Espanola, NM; 20 surveys completed.
6
7 Mon., Sept. 28, 2009; 5:00PM-7:00PM; Lucero Fitness Center; Espanola, NM;
8 17 surveys completed.
9
10 Sat., Oct. 10, 2009; 9:30AM-12:00PM; Chavez Fitness Center (publicly owned facility);
11 Santa Fe, NM; 51 surveys completed.
12
13 Wed., Oct. 14, 2009; 5:00PM-8:00PM; Chavez Fitness Center; Santa Fe, NM;
14 54 surveys completed.
15
16 Mon., Oct. 19, 2009; 5:00PM-7:30PM; Chavez Fitness Center; Santa Fe, NM;
17 45 surveys completed.
18
19 Wed., Oct. 21, 2009; 4:15PM-6:30PM; Pojoaque Pueblo Fitness Center (pueblo owned
20 facility); Pojoaque, NM; 20 surveys completed.

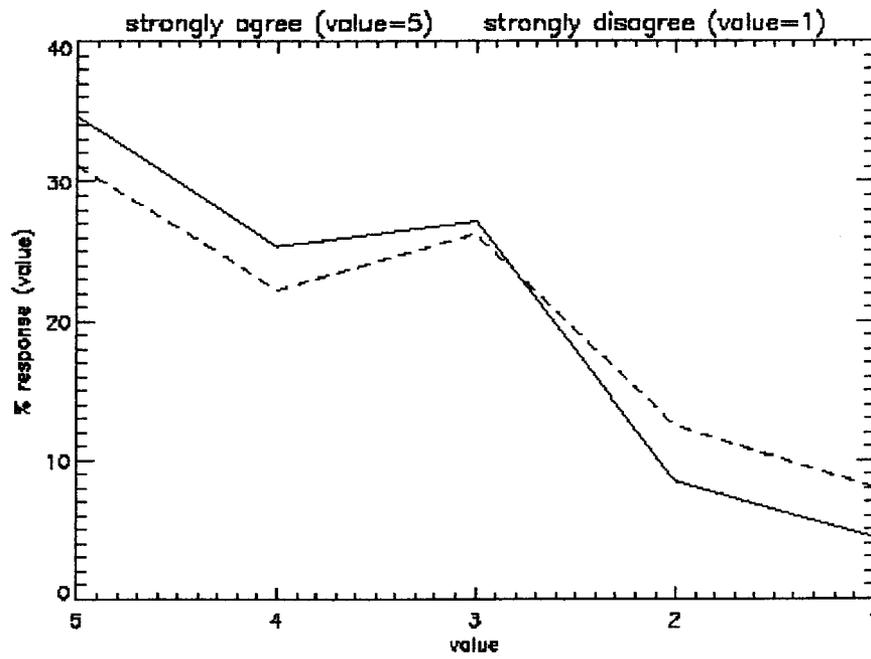
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22 The total number of surveys completed was 225.

23
24 The towns of Taos and Los Alamos were not surveyed. Based upon the results from
25 Espanola, Pojoaque, and Santa Fe, it was thought that Taos and Los Alamos could have
26 produced another 50 surveys, in a period of time estimated to be 5 hours, exclusive of
27 travel time. This would have improved the value of the expected maximum probable
28 error from 6.7% to 6.0%.

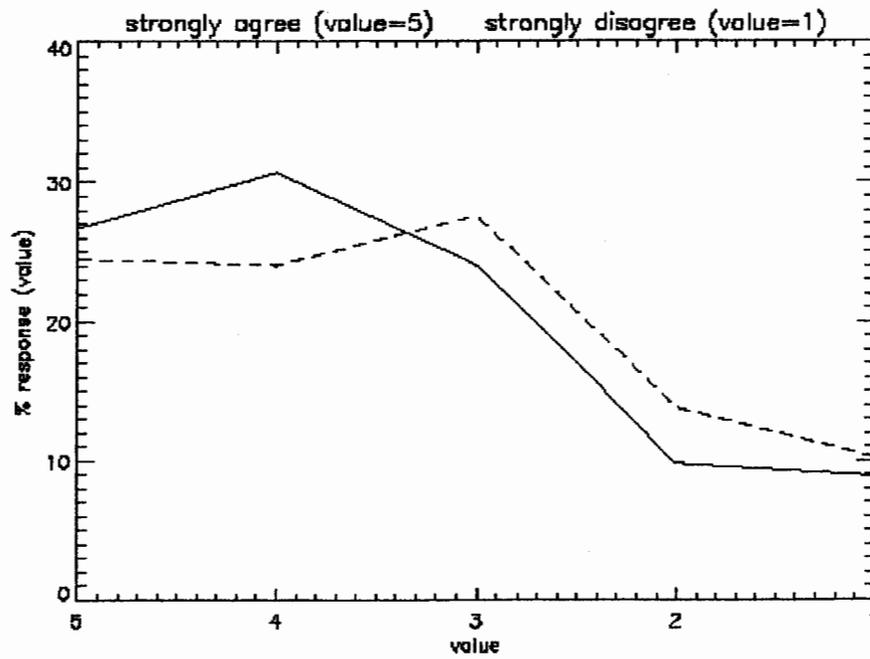
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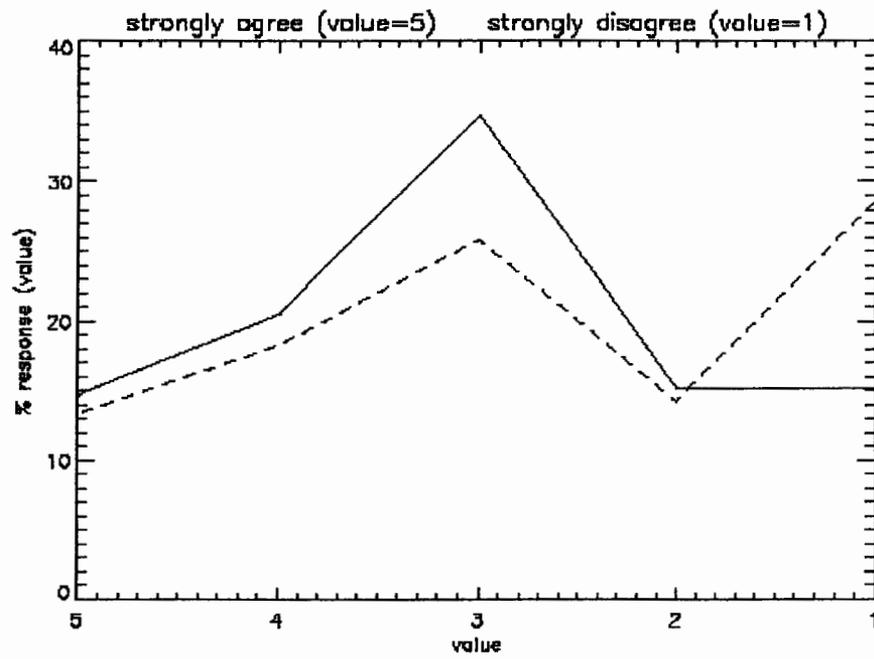
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2 Figure 1: statement #3 (solid line); statement # 4 (dash line)



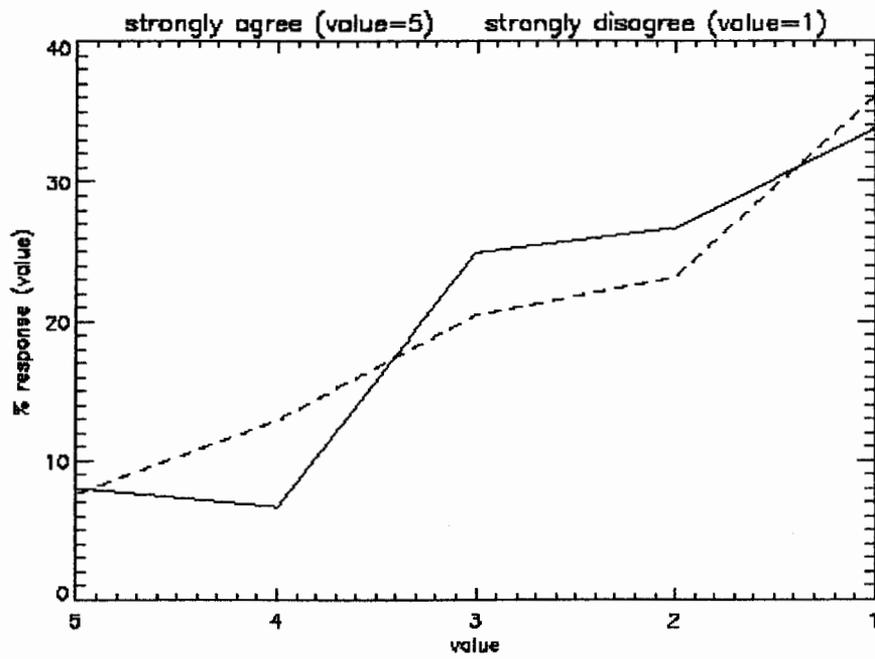
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2 Figure 2: statement #1 (solid line); statement #5 (dash line)



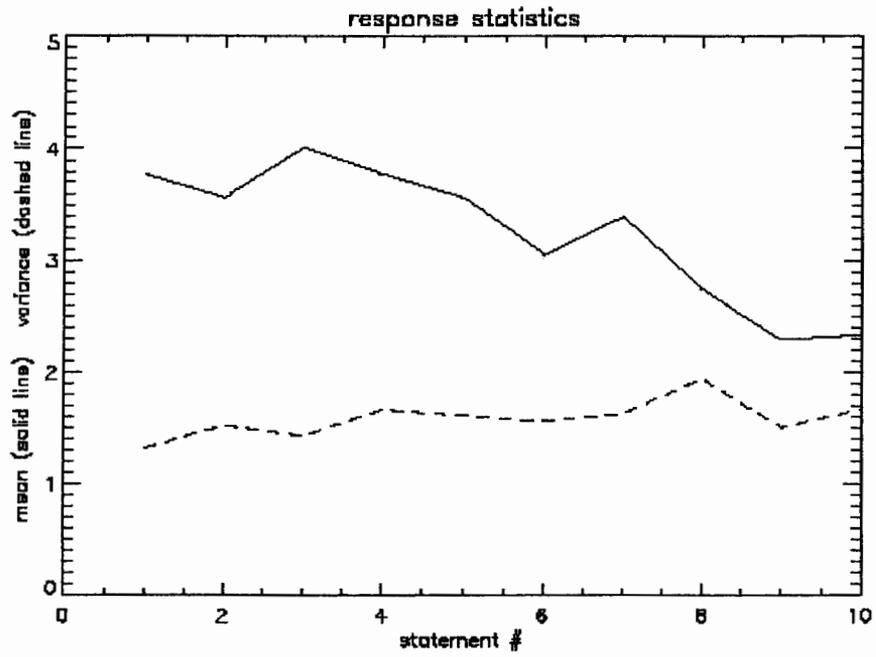
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2 Figure 3: statement #2 (solid line); statement #7 (dash line)



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2 Figure 4: statement # 6 (solid line); statement #8 (dash line)



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 2 Figure 5: statement #9 (solid line); statement #10 (dash line)



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3 Figure 6: mean of responses (solid line); variance of responses (dash line)