

UNITED STATES NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:
DAVIS BESSE INCIDENT

DOCKET NO: --- 50-346

(INTERVIEW & MEETING)
(CLOSED)

Discuss PORV Controls and Instrumentation.

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NATIONWIDE COVERAGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

TUESDAY, JULY 9, 1985

MEETING BETWEEN THE NRC FACT-FINDING TEAM AND TOLEDO EDISON

TO

DISCUSS PORV CONTROLS AND INSTRUMENTATION

NRC FACT-FINDING MEMBERS PRESENT:

ERNEST ROSSI
J. T. BEARD
LARRY BELL

TOLEDO EDISON MEMBERS PRESENT:

MR. ISLEY
MS. MacDONALD

ALSO PRESENT:

MR. HILBEBRAND, MPR

P R O C E E D I N G S

(2:40 p.m.)

MR. BEARD: Let's go back on the record.

This is another meeting of the fact-finding team where we would like to get some more detailed information on the operation of the pilot operated relief valve.

I guess really what we want to do is just like we have done in the previous meetings today is throw out a couple of points as part of our understanding and make sure that we understand it accurately. That is all.

MR. ISLEY: All right.

MR. BEARD: Let me put this figure along with the record, and I will give you a copy of it also. It is the same one that is out of the tech manual that you provided us, with one difference, and that is for some of the balloons around the outside, for example, Item No. 3, I have annotated that like at main disc. I put some numbers on it and a couple of things like that, and I have cross-hatched a couple of the cavities that were mentioned in the discussion so that they are more readily apparent. That is all.

MR. ISLEY: Okay. Right.

MR. BEARD: But there has been no change to the diagram.

(The document referred to, Fig. 1, Assembly of Pressurmatic Valve Style HPV-SN was marked Exhibit 1 and submitted for the record.)

1 MR. BEARD: Now one of the questions that I had
2 was in the description in the tech manual of the normal
3 condition of this with the plant at full power and at the
4 right pressure. So this thing would be closed.

5 MR. ISLEY: Right.

6 MR. BEARD: They talk about cavities B, C and D
7 being all at the same pressure.

8 MR. ISLEY: Correct.

9 MR. BEARD: And then they say that because the
10 pressure at the outlet Port E at the top is low, therefore
11 the valve disc is seated.

12 MR. ISLEY: That is right.

13 (Discussion off the record.)

14 MR. BEARD: I guess we are back on the record
15 again here.

16 What I was trying to get at, Tom, is in the tech
17 manual, as I remember it, it talks about since the pressure
18 at B and C cavities is high, and that is system pressure ---

19 MR. ISLEY: Right.

20 MR. BEARD: --- and the cavity at the outlet E is
21 low, therefore the valve disc is seated and there is no flow.

22 MR. ISLEY: Correct.

23 MR. BEARD: Now it seemed to me that a better
24 description was that the pressure above and below the valve's
25 main disc, in other words, the pressure in cavity B is

9A.
Sim 12-3

1 also somewhat above the disc ---

2 MR. ISLEY: Right.

3 MR. BEARD: --- and cavity C is on the underside,
4 those two pressures really balance the main disc and the
5 spring is what keeps it closed.

6 MR. ISLEY: Not according to Crosby. Their
7 description of the purpose for Spring C is essentially a
8 shipping holder and just an assist to get the valve closed,
9 and the valve should operate fine with Spring C, or with the
10 spring underneath the disc not even there. If the spring
11 were removed, the valve should work fine.

12 MR. BELL: So it is a differential area that is
13 holding the main disc closed?

14 MR. ISLEY: Yes. I think if you were to look at
15 the surface area available in there and compare the two
16 surface areas, you would see that there is more surface area
17 underneath the disc to compensate for that.

18 MR. BEARD: Okay. So it is the difference not
19 in pressures and really not in E. See, the point I was
20 trying to get at is the pressure in E is not really the
21 driving force for the valve disc as much as it is the
22 pressure on the underside and overside of the main disc as
23 I thought.

24 MR. ISLEY: Right.

25 MR. BEARD: Okay. Because that is what I wanted

Sim 12-4

1 to say. I thought the pressure on the outlet port is really
2 sort of immaterial.

3 MR. ISLEY: Right.

4 MR. BEARD: Okay. That is fine. That clears me up.

5 When the solenoid is energized, I take it the
6 plunger is sucked upward on the diagram and that causes the
7 bolt, the adjusting bolt they call it, to move downward?

8 MR. ISLEY: That is correct.

9 MR. BEARD: Now on the control of the solenoid
10 itself, the material that I have indicated that the pressure
11 signal input was from a pressure switch, and that is as
12 far as it went in the description that I had.

13 MR. ISLEY: Right.

14 MR. BEARD: Now recently when you were up to visit
15 us in Bethesda last week you gave us some drawings.

16 MR. ISLEY: Right.

17 MR. BEARD: And forgive, I have not had a chance
18 to study them, but I have one simple question. Is that
19 pressure switch really a dual set point bi-stable off an
20 NNI pressure instrument channel?

21 MR. ISLEY: That is correct.

22 MR. BEARD: That is all I want to know.

23 MR. BELL: The NNR or RPS pressure?

24 MR. ISLEY: The bi-stable itself is NNI.

25 MR. BELL: But the pressure transmitter is RPS.

9A
Sim 12-5

1 MR. ISLEY: Is RPS through a patch panel going to
2 the NNI system.

3 MR. BEARD: I agree, that is a clarification.

4 The last question I believe, and this has to do
5 with the control diagram for the electrical switch, and have
6 you got one handy?

7 MR. ISLEY: Yes, I think I do.

8 MR. BEARD: I only had one minor question on that
9 and then we are done I think.

10 MR. BELL: This is a control board hand switch?

11 MR. BEARD: Yes, the control board hand switch
12 where you put it in automatic or you manual open and manual
13 close or lock open.

14 (A document was laid on the table for the parties
15 to inspect.)

16 MR. BEARD: That is the one.

17 MR. ISLEY: This looks like the drawing that I have
18 got.

19 MR. BEARD: Now my question is I do not have a
20 development diagram for the switch itself. In fact, I am
21 sure if mine had it on the locked open.

22 Well, let me start here at the top. Around the
23 closed switch, Contacts 1A and 1B is a Contact 5A and 6A and
24 I didn't know what these are for, and that is about it.
25 Do you know what those are for?

9A.
Sim 12-6

1 MR. ISLEY: No, I don't. I would have to look at
2 the switch development itself. It is an unusual control
3 switch from what we normally use. There is a locked open
4 position and an automatic position on it, and then it is a
5 push to close switch, and I am not sure what the purpose for
6 that contact, that 5A and 6A Contact is. I would have to pull
7 that out.

8 MR. BEARD: Is that something that could be done
9 in like 15 or 30 minutes?

10 MR. ISLEY: Yes.

11 MR. BEARD: Okay. That is the last question I
12 had. Why don't we just leave that and let you come back
13 and tell us the answer to that one question and then I think
14 we are done unless Larry has some questions.

15

end Sim 16

Joe fols 17

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1 MR. BELL: I have one quick question. On this
2 drawing, on the power operator relief valve drawing, it
3 shows two mini switches.

4 MR. ISLEY: Yeah.

5 MR. BELL: Is that part of the original design
6 on this valve, or was that an add-on after Three Mile Island?

7 MR. ISLEY: That was an add-on.

8 MR. BELL: And how recently was that mini-switch
9 added?

10 MR. ISLEY: The drawing was approved in
11 3-9-78. That was before the accident.

12 MR. BELL: So it wasn't an add-on prior to the
13 accident. It was something you decided to do.

14 MR. ISLEY: We had had previous problems
15 with the valve, and that was one of our add-ons to provide
16 additional indication to the operator.

17 MR. BELL: Okay.

18 MR. BEARD: That is it. Thank you very much.

19 (Whereupon, the meeting concluded at 2:55 p.m.,
20 this same day.)

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CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

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(Interview & Meeting)
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were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission.

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7/9/ EXHIBIT #1
85 (ISLEY)

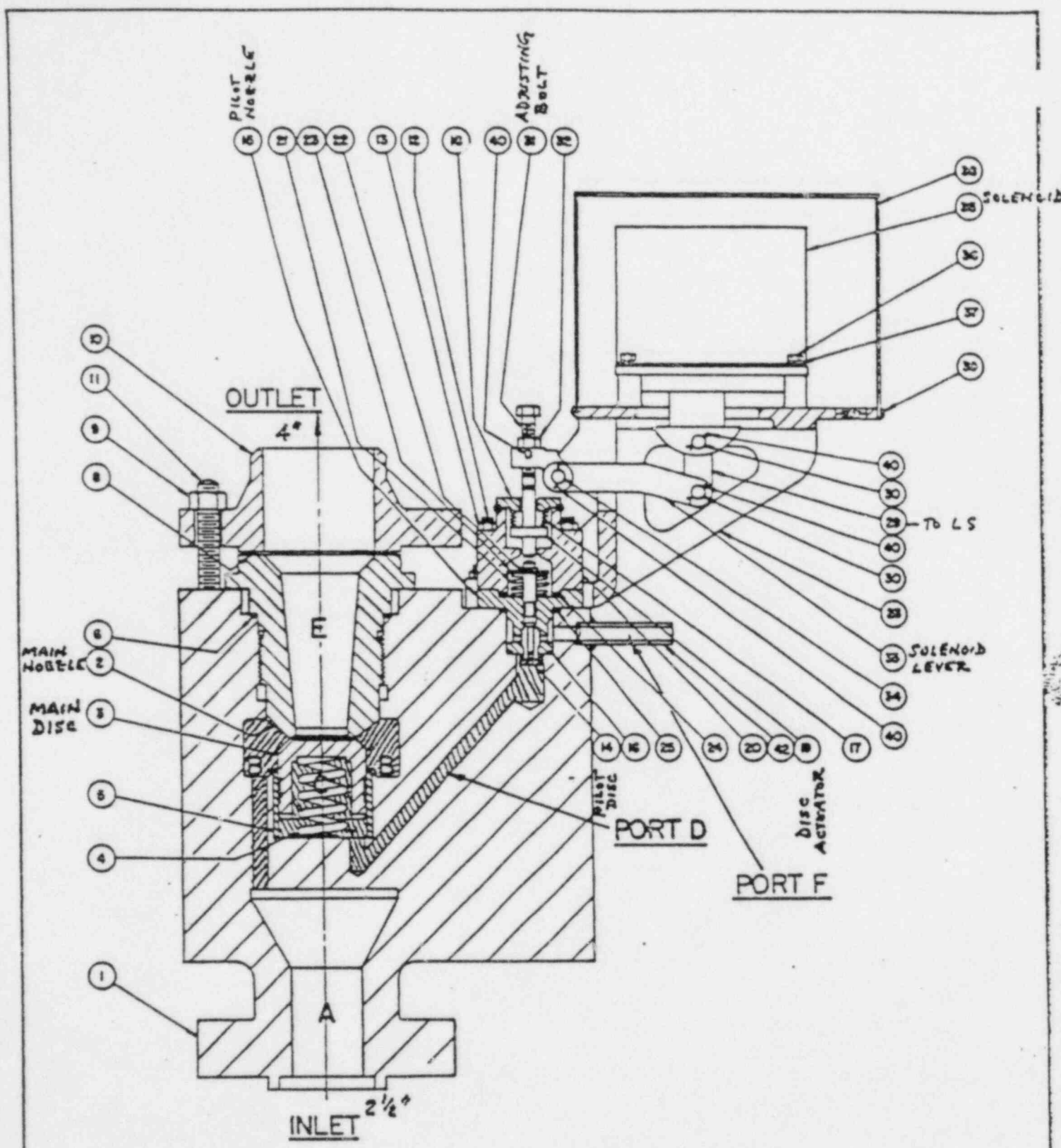


FIG. 1
ASSEMBLY OF PRESSURMATIC
VALVE STYLE HPV-SN