

Minutes of the Meeting of the
Advisory Committee for Review of the Enforcement Policy
July 25-26, 1985
Palo Alto, California

PDR
Advisory
Committee
on
Enforcement
Policy

Attending: Dennis Wilkinson, Joseph Hendrie, Colin Diver, Howard Parris
For the NRC Staff: Karen Cyr, Jane Axelrad

The Committee met from 8:30 a.m. - 5:00 p.m. July 25 and from 8:30 - 12:00 on July 26, 1985, in the offices of the Electric Power Research Institute in Palo Alto, California. Dr. Parris informed the group at the outset that Michael Hasten had called him the previous afternoon and indicated he would be unable to attend the meeting because of last minute business obligations.

The Committee discussed the draft sections of the report provided by the members present in turn. (See attached documents.) Organizational suggestions, alternate approaches and specific language changes were variously discussed. The Chairman offered to collate all the comments into a second draft of the report and kept notes on agreed upon changes.

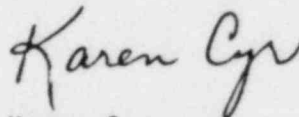
The Committee decided that the opening section of Mr. Diver's draft should go up front in the report because it provided a well-stated philosophy of enforcement. The Committee also suggested that the section discussing the data analysis should emphasize the tentative nature of any conclusions because of the small sample size. The Committee asked Mr. Diver to provide a description of the analytical

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methods used to be incorporated as an appendix to the report as an example of what could be done to analyze enforcement actions.

The section on management structure was found to be too unrelated to impacts on the enforcement program and was dropped from the draft report. A change in approach was also suggested for the section on inspector selection and training.

Because Mr. Hasten had been unable to attend or to provide a draft of the section on material false statements, the Committee decided that another meeting would be necessary to discuss that section and to develop a final set of recommendations. The next meeting was scheduled for September 23 and 24, 1985.



Karen Cyr
NRC Staff Liaison

Attachments: 1 - 6

August 19, 1985

TABULAR REVIEW OF COMMENTS

Effect of Enforcement Policy On:

	<u>Positive</u>	<u>None or Minimal</u>	<u>Negative</u>
1. Detection & correction of violation	3	11	5
2. Reporting of violations	6	7	4
3. Prevention of violations	2	12	3
4. Safety record of licensee	1	14	-
5. Morale of licensee	1	3	14
6. Public confidence	-	1	14
7. Worker's and public's willingness to report violations	2	6	5

Particular Features of Policy

1. Civil penalty levels

(A) In General	<u>Too high</u>	<u>About right</u>	<u>Too low</u>
	7	4	-
(B) Relative Levels (across Supplements)	<u>About right</u>	<u>Inconsistent</u>	
	-	11	-

2. Upward or downward adjustments

	<u>About right</u>	<u>Upward adj. too Generous Limited</u>	<u>Downward adj. too Generous Limited</u>
(A) As written	5	1	8
(B) As Applied	-	-	5

3. Classification of violations by severity level

(A) Number of levels	<u>Too many</u>	<u>About right</u>	<u>Too few</u>
	3	3	-
(B) Assignment of violations to levels	<u>About right</u>	<u>Too lenient</u>	<u>Too harsh</u>
	1	-	6

4. Material false statements policy

(A) In General	<u>About right</u>	<u>Too lenient</u>	<u>Too harsh</u>
	1	1	15
(B) If too harsh, should be restricted to:			
°Written statements (not oral)			5
°Willful and/or reckless misstatements			10
°Affirmative statements only (not omissions)			
°Statements on which NRC did, or have been expected to, rely			2

5. Relative emphasis on negative and positive incentives

	<u>About right</u>	<u>Insufficient Use of Positive Incentive</u>
(A) In General	2	17
(B) If Insufficient use of positive incentives - should use:		
°Mitigation for past good performance		4

°Public commendation for good performance 1

°Total mitigation or no citation for corrective action 10

°Reduced inspections 2

6. Progressive escalation of enforcement sanctions	<u>About right</u>	<u>Too harsh or rapid escalation</u>
	8	6

7. Procedures

(A) Enforcement Conferences	<u>About right</u>	<u>Problems</u>
	2	5

If problems:

°NRC not sufficiently communicative	3
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°NRC not sufficiently responsive	2
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°Too late in the process	1
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(B) Publicity	<u>About right</u>	<u>Problems (in general)</u>
	-	3

If problems:

°Inadequate notice to licensee	5
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°Contents too one-sided	7
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°Should not be issued at all -

°Subsequent mitigation not well publicized 1

8. Supplement 8 of the Policy	<u>Satisfactory</u>	<u>Unsatisfactory</u>
	1	4

Responses to Specific Questions

1. Impose sanctions on individuals?	<u>Never</u>	<u>Willful & serious viol. only</u>	<u>Licensed operators only</u>
	4	11	8
2. Effect of regionalization?	<u>None or minimal</u>	<u>Positive effect</u>	<u>Reduced consistency</u>
	3	6	12
3. Identification of root causes?	<u>Usually</u>	<u>Sometimes</u>	<u>Rarely</u>
	6	8	5
4. Increased reliance on self-identification?	<u>Yes</u>	<u>No</u>	
	13	2	
(A) Increased reliance on third parties	<u>Yes</u>	<u>Yes, INPO-like organ. only</u>	<u>No</u>
	5	2	7

Advisory committee management officer

Notice 7590-01 dated 31 August 1984 ^(Enclosure 1) Established

AN AD HOC committee for review of

Enforcement Policy in order to obtain

independent advice and recommendations

concerning NRC enforcement policy and

practice. the purpose of the committee

is to review NRC's current enforcement

policy to determine whether it achieved

desired purposes and provide the

Commission with recommendations on any

changes it believes advisable. the

notice provided a charter ~~(Enclosure 1)~~

(included in Enclosure 1) that notes the

purpose of the NRC enforcement policy
 is to promote and protect the
 radiological health and safety of the
 public, including employees' health and
 safety, the common defense and security,
 and the environment:

Mr. Dicks, ^{NRC} Executive Director of operations,
~~letter~~ letters of Sept 26, 1988 (Enclosure 2) confirmed
 the invitations to following committee
 members:

Colin S. Diver
 Michael V. Hosten Esq.
 Joseph Hardare
 Howard J. Parsons
 EP Wilkinson

~~Mr. Dicks~~ and asked ~~that~~ that the report

address the following questions:

1. Is the current enforcement policy improving compliance with NAC ~~requirements~~, by
 - (a) obtaining prompt and corrective actions;
 - (b) deterring future violations; and
 - (c) encouraging development or improvement of a licensee's own programs for detecting of incipient problems?
2. Does the current enforcement policy either as written or implemented have ~~any~~ any negative impacts on safety?
3. Are there alternative or more effective enforcement options available to the Commission to improve compliance with its requirements?

Mr. Dircks assigned Karen Cyr of the executive legal director's office to act as liaison with the committee and to assist in any administrative tasks. June Akelard had also ~~previously~~ assisted the committee in its efforts.

~~Public~~

meetings open to the public have been

held on Dec 18-19, 1984, Jan 30-31, 1985,

April 10-11, 1985, April 30 - May 1, 1985; July 9, 1985

and July 24-25, 1985. Agendas, ~~and~~

~~transcripts~~ transcripts, ^{and} minutes are

attached (Enclosure 3) During these

hearings testimony was given by a total

of 53 witnesses from NRC staff,

utilities, other Federal ~~agencies~~ agencies,

law/consulting firms, AIF and EEL

as listed (Enclosure 4).

~~IN A~~

IN A notice, 7590-01, published

in the Federal Register on 9 January
1985 the committee requested
public comment on a series of
questions (Enclosure 5) In addition
to the testimony of the 53
witnesses ^{given} ~~heard~~ at the public
hearings the committee received
many written comments ~~received~~ both
~~concerning~~ ~~and~~ questions and the
~~impediment~~ ~~to~~ an enforcement
in general and with specific
attention to the published questions.
Many times more voluminous ~~with~~ ^{with}
the other background material

~~that the ARC staff~~ provided by
the ARC staff, ~~of reports,~~
~~retained~~ This included many
other ^{earlier} public comments and a
number of publications and ~~summaries~~
~~and~~ and ~~enforcement~~ enforcement
summaries. A Bibliography is
attached (Enclosure 6)

Committee letter to Mr. Dirks of
Dec 19, 1984 provided a report of the
committee's planned actions in carrying out
its charter and invited suggestions
in individuals and organizations that

should be solicited per views. (Enclosure 7)

~~the responses (Enclosure 8) included~~

the suggestions in the responses (Enclosure 8)
included public interest groups. Although
~~intended~~ ~~and~~ solicited we did not hear
from such groups orally but ~~will~~ ^{do}
have some written comments. Solicitations
to material licensees also failed
to generate witnesses to testify, ~~at~~
official and our data ~~is~~ ^{is} limited
the reference material consists of
written comments. ~~and the first summary~~
~~is~~ ~~governed~~ ~~by~~ The majority
of data The committee has

obtained then refers to civilian
power reactor enforcement issues.

The material is listed
in the bibliography (enclosure 2) comprises
a large amount of reference
material. Review of that material
shows that much of it is based
on the subjective impressions and
opinions of individuals. The enforcement
data has not been normalized to
changing requirements or statistically
compiled so as to be easily
amenable to analysis. In its

and use of the material
review¹ The committee has been

constrained by limited time and

resources. ~~proper~~ [↑] A proper approach

to enforcement is ^{very} important. and that

the committee feels that there is

information of value in the reference

material that deserves further

consideration. It is suggested

that the ARC staff should

undertake a further collation and

analysis of this material ^{and other such data available} to

develop findings and recommendations

to augment those of the

comm. Hec.

within the limits of the time
and resources available to the committee
the following discussions, comments,
and recommendations are based
on the committee's review and
analysis of the testimony and
reference material provided.

DRAFT

-1-

J.M. Hendrie
7-21-85

IV. PROCEDURES

In this section several issues are discussed that may be regarded as procedural in nature. These include the general subject of timeliness of enforcement actions, the nature of enforcement conferences, the public information aspect of enforcement action and the division of authority between headquarters and regions.

A. TIMELINESS

In most of the written comments received by the Committee, as well as in remarks of witnesses appearing before the Committee, the issue of timeliness of enforcement action was raised. It was cited as an essential feature of an effective enforcement program by all of those commenting on the issue. It was also cited by almost all as an area in which the enforcement program as carried out in the past has often been deficient. Enforcement actions involving civil penalties are an especially sore point.

^{Some} Civil penalties ^{are proposed} ~~tend to be imposed~~ months after a violation has been identified and corrective action taken. If the violation for which the civil penalty is proposed involves ~~Commission review or~~ Office of Investigations or Department of Justice involvement, the time can stretch out to several years. From the licensee's standpoint, the proposed civil penalty and attendant negative publicity then come long after corrective action has been taken and the licensee feels he has moved on past the violation event. The civil penalty and its announcement seem to come as a gratuitous low blow, largely disconnected from the violation. The effect on plant staff attitude and morale is claimed to be palpable and negative.

A lack of timeliness in enforcement action, especially for escalated actions, seems likely to reduce the effectiveness of the action. ^{Furthermore,} ~~While a proposed~~ ^{proposed} civil penalty, ~~even though imposed~~ long after a violation has occurred, may set an example to be avoided for other licensees, this positive effect is at least partially offset by the ~~largely~~ negative effects on the licensee ^{'s morale.} ~~being fined.~~ ^{Further,} civil penalties ~~imposed~~ ^{proposed} long after the initiating violation seem disconnected from the violation, and almost as a random afterthought rather than a direct response to the violation.

The importance of timely enforcement action is well recognized throughout the NRC staff. The Regional Administrators were quite strong on the need for timely action as an essential feature of an effective enforcement program. The staff also recognizes the negative aspects of the cases where escalated enforcement action has been substantially delayed. Recent efforts by the enforcement staff to improve the timeliness of escalated actions has resulted in some tightening up. Civil penalties that ~~do not have to go to the Commission and do not~~ involve the Office of ^{Investigations} ~~Inspections~~ are now being announced about 10 to 12 weeks ^{on average} after identification of the violation. These are typically Severity Level III ^{and higher} violations. Information on the timeliness of non-escalated actions, Severity Levels IV and V is not currently collected by Headquarters ^{for the regions,} ~~but~~ ^{are running, at a guess, between 6 and 8 weeks from the identifying inspection to} ~~a Notice of Violation.~~

In April of this year, the staff published a new chapter 0400 of the Inspection and Enforcement Manual, dealing with the enforcement program. This new chapter explains how the regional offices and the Office of Inspection and Enforcement are to implement the General Statement of Policy and Procedure for NRC Enforcement Actions, 10 CFR Part 2, Appendix C. The avowed aim is "to achieve uniformity and consistency of enforcement".

The new IE manual chapter sets a fairly brisk pace for enforcement action. It prescribes an enforcement conference, if one is to be held, before issuance of a Notice of Violation and within 4 weeks after completion of the inspection where the violation was identified or after issuance of an investigation report (if the Office of Investigations is involved). Then, if an escalated enforcement action is contemplated, the new manual chapter specifies that the action be sent to IE Headquarters for concurrence within 6 weeks of the last date of inspection or of the investigation report and that Headquarters should concur within 2 weeks.

The overall effect is an 8-week schedule from identification of the violation to issuances of the Notice of Violation, with an enforcement conference having been held during that time. If the staff can achieve the 8-week schedule in escalated enforcement actions, that should alleviate most of the problems with untimely enforcement action for those actions that are not delayed by ~~Commission~~ or Office of Investigation activities, *or by preparation of a Commission paper.*

~~Timeliness problems will remain, however, in the cases that do go to the Commission and that are subjects of investigations unless the Commission and the Office of Investigations are willing to tighten up their parts of the schedule. The Committee sees no reason why that cannot be done by both institutions.~~

For ^{most} cases, in which the Commission must be notified, the ~~new~~ manual chapter specifies preparation of an Enforcement Notice which is sent to the Commissioners as soon as the IE Director has concurred in the enforcement action. Commissioners

then have 3 days to object: if they do not, the Notice of Violation is issued, and that is the usual result. In those cases where the enforcement action is referred ~~That is certainly timely action when it occurs. The problem is that Commissioners to the Commission with a full Commission paper (material false statements, severely level I violations, and penalties of \$300,000 or more), a delay may occur because of~~ often object and that resolution of the objections often takes months. It would be helpful if the Commission would adopt a policy of voting a proposed enforcement action up or down within some reasonable time of receiving the Enforcement Notification, say 2 or 3 weeks, and agree to abide by a majority vote. ~~often difficult to prepare, being summaries of large and complicated investigations or other extended inspection efforts, which in some language that satisfies all~~ ~~concurring parties. Once such a paper is delivered to the Commission, two weeks are generally allowed for Commission consideration. The staff should be able to deliberate the case & prepare and obtain concurrence on~~

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Investigations

Expediting the work of the Office of ~~Inspection~~ may be more difficult.

~~Nevertheless it should be possible to assign a high priority to the initial inquiry phase when the Office of Investigations is involved in a prospective enforcement action so that there can at least be a timely determination as to whether the matter requires an in-depth investigation. Those cases that do not require full-scale investigations can then go forward in the normal manner and on schedule. Even where a full-scale investigation is required, it may be possible to arrange the priorities within the Office of Investigation to move escalated enforcement action cases along at a brisker pace. As a way of raising the visibility and improving resource management of such cases, the Committee suggests that where a full investigation is to be done on an enforcement action, OI prepare a target schedule for the investigation in consultation with IE, and then stick to it.~~

Cases referred to the Department of Justice are generally the most difficult to deal with from a timeliness standpoint. There have been a number of these cases in recent years, ^{and the number is increasing,} ~~as alleged material false statement cases have begun to be routinely referred to the Department of Justice. (The numbers of such cases would be substantially reduced if changes now contemplated in the definition of material false statements were made, a circumstance that raises some questions about the logic of referring all present material false statement cases to Justice).~~ If an escalated enforcement action is held in abeyance pending completion of Department of Justice proceedings in the matter, the delay may well run to several years.

~~Since~~ ^{more} it is unlikely that the Commission can do much to obtain ~~more~~ timely treatment of its affairs at the Department of Justice, ^{2) than to continue to press DOJ for concurrence in proceeding with an enforcement action.} ~~some other approach is needed.~~ The Committee believes that the Commission should examine very carefully whether it is necessary in all cases to hold an escalated enforcement action in abeyance while the mills at DOJ grind their inexorable way forward.

Insert to p. 4

The Committee has not looked into OI operations to an extent that would permit it to make detailed recommendations. However, it is clear that when OI conducts a full investigation in a case, there ~~are~~^{is} substantial ~~delays in cases~~ additional time (often many months) involved. Even the OI preliminary inquiry to determine if a full investigation is needed can add a month or two. The Committee notes ^{with approval} a recent memorandum from the Executive Director for Operations ~~attaching~~ specifying the procedure for requesting OI investigations and reflecting ~~such~~ ~~agreements~~ agreements with OI on establishing priorities and schedules for investigations. The Committee believes that because investigation-related delays are ~~the~~ due in part to the heavy workload in OI, more careful screening by the IE staff of requests for investigation, by reducing that workload, would contribute to more timely completion of investigations. Also, the Committee understands that consideration is being given by OI to returning lower priority cases to the ~~the~~ IE staff, where OI cannot schedule the investigations within a reasonable time, say 6 months. The Committee believes that is preferable to ~~such~~ extended delays in these cases.

Recommendations: Timeliness and Enforcement Actions

1. The staff should meet the 8-week schedule in the new manual chapter for the period from the last inspection on an alleged violation to issuance of the Notice of Violation.

2. The ~~Commission~~ ^{staff} should ~~adopt a policy of resolving Commissioner~~ ^{expedite the process of preparing and} ~~obtaining concurrence on Commission papers referring escalated~~ ^{obtaining concurrence on Commission papers referring escalated} ~~objections to an enforcement action by voting on the action within 3 weeks and~~ ^{enforcement actions to the Commission.} ~~accepting the majority vote as settling the matter.~~

3. The Office of Investigations should assign high priority to initial inquiries on enforcement cases referred to it, in order to determine expeditiously whether a full investigation is needed. Where a full investigation is needed, the Office of Investigation should prepare a target schedule for the investigation in consultation with enforcement staff and should make every attempt to meet it.

4. The NRC should consider the possibility of going forward with an escalated enforcement action in a case referred to the Department of Justice ~~before DOJ completes its disposition of the case.~~

B. ENFORCEMENT CONFERENCE

The enforcement conference is one feature of the enforcement program for which almost everyone had a good word. The regulators all felt that it was one of the more effective and efficient parts of the enforcement program. The regulated had some bad experiences with enforcement conferences to cite but nevertheless thought it was one of the better elements of the program and thought it could be even better. Clearly, the enforcement conference can be an occasion for effective exchange of information and points of view on the details of the particular occurrence, the violation that might arise from it, the root causes for the event, ~~and~~ short-term and long-term corrective actions that are being taken or should be taken, and potential mitigating and escalating factors.

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3. The staff should, by careful assignment of priorities and screening, reduce ~~as much as~~ the number of requests for investigation ~~sent to OI~~ to those cases clearly requiring Office of Investigations participation.

4. The agreement, reflected in the EDO memorandum of July 5, 1955, that OI will provide a priority and schedule for each investigation should be ^{fully} utilized.

5. ~~The~~ Cases referred to OI but of lower priority and for which OI is unable to start an investigation within some reasonable time (say 6 months) should be ~~returned~~ returned to ~~the field~~ and followed up by IE, in preference to ^{more} extended delays ~~in OI~~ in OI.

Practice varies between regions as to whether or not the inspection report covering the prospective violation is completed and made available to the licensee before the enforcement conference. Reasonable arguments can be made for either practice. Holding the inspection report open allows the incorporation of any pertinent information that may develop at the conference and allows the possibility of correcting mistaken impressions or information in the draft inspection report. Completing the inspection report in advance of the enforcement conference makes it possible for the licensee to see much more clearly the particular areas of difficulty that are going to be discussed, ~~providing, of course, that the licensee gets a copy of the inspection report in time to study it before the conference.~~ Having the inspection report complete and filed before the conference is seen by the staff as helping to avoid any impression that the licensee has been able to exert undue influence in an enforcement conference and cause the staff to reverse itself.

The timing of the enforcement conference has in the past been influenced by whether the pertinent inspection report was to be completed before or after the conference. Now, however, the manual chapter on the enforcement program requires that an enforcement conference must be held before issuance of a Notice of Violation and within 4 weeks after completion of the inspections pertaining to the prospective violation (or after issuance of an investigation report). The manual does not specify when the pertinent inspection report should be completed, leaving that to the regions to determine. Either way, the 4-week requirement applies and if observed in practice should assure timeliness of enforcement conferences.

The new manual chapter also requires that the licensee be told that the meeting is an enforcement conference. That improves upon some past practices where in at least one case the licensee was told several weeks after the meeting

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The Committee believes that inspection reports should be completed and sent to licensees before enforcement conferences, because the Committee believes licensees should have an adequately detailed written description of the staff's understanding and views on the occurrence in question. ~~The~~ The inspection report is the obvious document for this purpose. The regional staffs will have to expedite their preparation and approval of inspection reports to achieve the 4-week schedule for enforcement conferences ~~the~~ specified in the new manual chapter.

that he had been in an enforcement conference and a Notice of Violation was being issued.

The basic, and unsettled question about the enforcement conference is what kind of a meeting it ought to be. At present, conferences appear to vary from genuine and serious exchanges of information and points of view, through meetings in which the licensee is allowed to present any explanations he may have and outline his corrective programs but in which the staff volunteers essentially no information or point of view, and to occasions when the conference seems only to be an occasion for lecturing the licensee on his sins and informing him that a fine is forthcoming. The latter sort of enforcement conference may well be appropriate if it is the second or third time the same subject is being discussed and there has been no improvement to date. But the Committee believes that for most enforcement conferences, a serious exchange of information and points of view would be more productive and more effective as an enforcement mechanism. Such a format for the conference requires that reasonable notice be given the licensee so that he can prepare for it. The Committee regards 3 working days as a minimum, and more time will improve the quality of the discussions.

~~The Committee makes no judgement on the relative merits of completing and filing the inspection report before or after the enforcement conference.~~

Recommendations: Enforcement Conference

1. Enforcement conferences should generally be serious exchanges between staff and licensee of information and points of view about the occurrence^{re} giving rise to the conference. The staff should be prepared to outline its understanding of the occurrence^{re} and its position on possible violations. The licensee should be prepared to provide as accurate an account of the occurrence^{re} as he can, the results of his investigation of the root causes of the occurrence^{re}, and the corrective actions ^{taken and contemplated.} ~~that he has and will undertake.~~

2. The licensee should be given as much notice as practicable, with a minimum of 3 working days, that a meeting to which he has been called is an enforcement conference, ^{be in writing and should include} and the notice should ~~contain a sufficient description~~ ^{the pertinent inspection report.} ~~of the subjects to be covered so that the licensee can prepare for the conference.~~

C. PRESS RELEASES

The practice to date has been for the NRC to issue a public announcement of proposed civil penalties. The policy was reconsidered in 1983 by the staff and it was concluded that the practice should be continued. Since the pertinent final documents in an escalated enforcement action are placed in the Public Document Room, the information becomes public when the Notice of Violation and proposed civil penalty is sent to the licensee whether there is a press announcement or not. The press release reaches a substantially broader media audience than is likely to be attendant in the Public Document Room, however, and therein lies the concern of licensees who feel that the press coverage of a proposed civil penalty ^{is more} ~~is as~~ damaging to them in a variety of ways ^{than the} ~~as any~~ dollar amount. ~~that might be levied.~~

The NRC's public information staff believes that it is important to announce proposed civil penalties because they represent the judgement of the staff that there may be a serious breach of the license or of the regulations. The staff view is that ^{such} ~~that is~~ information that should be volunteered to the public and to the Congress at the time the action is proposed. The staff cites the high interest of persons who live near the plants in the operation of the facilities and feels that the staff has an obligation to keep the public informed of significant developments at the time they occur.

The licensee view is that the bad press associated with escalated enforcement actions undermines public confidence in the licensees. The newspaper accounts read by the public with regard to enforcement actions deal almost

exclusively with the "wrongdoing" that resulted in the violation and any subsequent positive development rarely comes to the public's attention. A single enforcement action can result in negative press accounts two or three times, since the initiating event and the final payment of the penalty may be covered by the press in addition to coverage of the Notice of Violation and announcement of proposed civil penalty. The public may thus be left with the impression that the licensee has been fined more than once. At least one licensee finds the negative press coverage so onerous that they decline to argue for mitigation of any proposed penalty, judging that the potential negative press coverage of their reply and NRC's final decision would outweigh any possible benefits of partial mitigation. They feel that even if complete mitigation were achieved it is unlikely that the public would connect the facts and that it would be difficult, if not impossible, to erase the negative impressions formed months earlier.

It is not likely that any easy resolution of these conflicting views is possible. The perceived high "costs" of press announcements by the NRC of proposed civil penalties is part of the deterrence factor, just as the civil penalties themselves are, *as noted earlier in section ____.* On the other hand, if the press announcement policy for enforcement actions leads to an unjustified loss of public confidence in the safe operation of nuclear facilities, then it is not serving either the immediate objectives of the enforcement policy nor the broader objectives of the NRC.

It is interesting in this connection to note the language of Order 1000.9D of the Administrator of the Federal Aviation Administration (October, 1982): "Publicity. Individual enforcement cases may be publicized only when such publicity will significantly serve the goals of the enforcement program and only in a manner that will reasonably protect an alleged violator's right to due process and fair treatment." It is hard to argue that the FAA does not regulate matters important to public safety or that the traveling public is not vitally interested in the safety of the aircraft they ride.

The NRC press release practice with regard to escalated enforcement actions is a long-standing and deep-seated one and it is clear the agency would have considerable internal struggle in giving it up. Also, since on the licensee's own testimony the public announcement of a proposed civil penalty carries as much or more weight as the dollar amount that may be levied, it is not clear that the agency ought to be asked to forego such an effective enforcement weapon. Thus, although a fair case might be made for urging adoption of the FAA publicity policy, the Committee limits its recommendations to some minor modifications in the mechanics of the present practice.

The new manual chapter on the enforcement program prescribes that after an enforcement action has been signed, and the Regional Public Affairs Officer has verified that the subject licensee has been notified and has received a copy of the Notice of Violation, the press release is issued. Licensees continue to report being taken by surprise with announcements of escalated enforcement actions, however. Allowing one working day's grace between verification that the licensee has received the Notice of Violation and issuance of the press release would allow some time for the licensee's internal communications to function and for the licensee to prepare to answer press questions about the matter.

A second point has to do with the information in the press release itself. If the NRC press release is going to command wider media attention and is more likely to be the basis for press accounts than releases from licensees, as almost certainly seems to be the case, the NRC press releases ought, in the interests of fairness and completeness of information to the public, to be reasonably balanced. A press release on an escalated enforcement action will obviously carry that action and the causes as the lead items. But if the licensee has taken corrective action and it is complete or underway, that information ought to be made clear and explicit in the press release. Further, if the licensee has

been operating in reasonably good shape and conformance with regulations for some time, and is again in conformance, then those facts ought also to be noted in the press release in order that the public is not misled by reading solely about the particular violation and proposed civil penalty.

Recommendations: Press Releases

1. The enforcement program manual chapter section on press releases should be amended to provide for a one working day grace period between verification that the subject licensee has received a copy of the Notice of Violation and issuance of the press release on the proposed enforcement action.

2. Press releases on enforcement actions should include such information as the initiation and progress of licensee corrective programs for the violation in question and plant operating status and recent operating history in order to present a more complete and balanced account to the public.

D. REGIONALIZATION

There has been some question about the effect of regionalization on the NRC enforcement policy. The obvious concern is that in strengthening the five regional offices of the NRC, appointing their heads Regional Administrators, and granting a certain degree of autonomy to the regional offices, differences in enforcement programs and practices may develop. The better view seems to be that regionalization has not had ^{a major} ~~very much~~ effect on the enforcement program and its implementation. The processing of both routine and escalated enforcement actions is much the same now as before the move toward greater autonomy for the regions. The only significant change has been the delegation of authority to Regional Administrators to sign escalated enforcement actions which have been reviewed and concurred in by IE Headquarters. Previously all such actions were signed by the IE Director.

although there may be some increased difficulty in obtaining timeliness and consistency between regions.

It is generally felt on both the staff and licensee sides that nation-wide consistency in enforcement is a desirable goal. The escalated enforcement actions, at Severity Levels I, II, and III, are all processed through IE Headquarters so that a reasonable degree of consistency is enforced. However, the individual regions handle all aspects of Severity Level IV and V violations and IE Headquarters has not been involved in the past. The Committee notes with approval that a headquarters program of sampling Severity Level IV and V violations from each of the regions is being instituted. This should provide some basis for adjustment of practice between the regions to achieve greater consistency for these lower level violations.

An additional aspect that needs consideration is that corrective actions proposed by licensees and accepted by regional staffs are not examined to see that the treatment and results are consistent across the country. Since it is not at all clear how one might go about examining these matters for consistency, the Committee refrains from making any recommendations in this area.

While regionalization may have contributed some small degree of inconsistency, it appears to the Committee to be a reasonable price to pay for the improved contact of regional staffs with the ~~operating~~ licensee facilities.

V. Penalties and Sanctions

A. Philosophy

The imposition of sanctions can be used to serve any one of three purposes: retribution, incapacitation, and deterrence. Of these, the second and third are relevant to the context of nuclear regulation. Retribution is appropriate--if at all-- only in the context of crimes against the moral order. Most regulatory violations involve conduct which is prohibited not because it is inherently immoral or evil (*malum in se*), but because its value is outweighed by the harm it might cause in the particular context.

1. Incapacitation has a legitimate role in nuclear regulation, but a limited one. Where a regulated entity shows itself to be fundamentally and chronically incapable of carrying out its responsibilities, it should be disqualified by suspension or revocation of its license. One would expect this sanction to be used only very selectively in the nuclear context, however, for two reasons. First, the degree of incapacity necessitating license removal occurs very rarely. The entities regulated by NRC are typically responsible and competent. The corporate entities regulated by NRC--electric utilities, laboratories, hospitals, etc.--have longstanding ties to their communities, employ professional staffs, and guard their reputation. In order to succeed in their lines of business, they must display a generally high level of competence that presumably carries over to their conduct of

activities regulated by NRC. Likewise, the individuals licensed by NRC typically have extensive education, training, and responsibility. The licensing process itself, moreover, should screen out those corporations and individuals who lack the basic qualifications to conduct regulated activities in accordance with NRC requirements. Second, removal of a license can impose a cost on the public by reducing the sources of supply of an essential service. Consequently, this sanction should be reserved for extreme cases.

2. Deterrence. Sanctions can serve a deterrent function by increasing the perceived cost (as viewed from the perspective of the regulated entity) of engaging in prohibited conduct. It is the threat of the sanction, not its actual imposition, that achieves the deterrence. The purpose of actually imposing a sanction when a violation has occurred is to maintain the credibility of that threat.

a. The Importance of Deterrence

The relative importance of the deterrence function of regulatory enforcement depends on two things: the strength of existing (extra-regulatory) incentives for compliant behavior and the social consequences of (otherwise undeterred) violations. In the nuclear area, these two factors often point in opposite directions. The existing incentives for compliance are, in most contexts, quite numerous and strong. Violating an NRC requirement presumably increases the risk of an incident or accident. The consequence of such an incident or accident to the licensee may include injury to its own personnel, damage

to its own property, loss of capacity utilization, liability for injury or damage to others, and adverse impact on reputation in the financial, labor, service, and political marketplaces. Compared to those existing potential costs, regulatory sanctions are viewed by many observers as having little deterrent impact. While that is perhaps true as a general matter, existing incentives are not equally effective in all contexts. Insurance, for example, may dilute the fear of liability. So may statutory ceilings on liability (as under the Price-Anderson Act). The ability of some electric utilities to pass increased fuel costs directly through to the consumer may dilute the deterrent value of a fear of shut-downs. Problems in communication, supervision, and personnel development within large organizations can also weaken the translation of corporate incentives into employee behavior. A sensible regulatory enforcement program should therefore focus its energies on those areas of regulated activity where non-regulatory incentives are weakest.

Effective regulatory deterrence is also especially important where the harmful consequences of error are greatest. The less serious the violation, the more uncertainty one can tolerate concerning the effectiveness of nonregulatory incentives. Where harmful consequences are catastrophic, however, those uncertainties should be resolved in favor of using regulatory penalties as a major supplement to other incentives for compliant conduct.

b. Implications of the Deterrence Perspective

Designing an enforcement policy to achieve effective deterrence requires the regulator to keep several points in mind.

1) Uncontrollable Conduct. No deterrent function can be served by punishing someone for an action or outcome wholly beyond his control. If an agency is perceived as punishing people for freak events, its enforcement program will lose credibility. One must concentrate on preventable occurrences. Punishing a corporation for its employees' behavior must be predicated on a plausible belief that the corporation could have controlled its employees' behavior.

2) Perception and Reality. What matters for deterrence purposes is the regulated population's perception of what the regulator will do in the event of a violation. A regulator must therefore strive to find out what that perception is, and if appropriate, to change it. Merely changing the reality of enforcement is not enough (and may not even be necessary) to change perception. Communication is also necessary.

3) Sanctions, Costs, and Penalties. To deter a particular form of behavior, it is necessary to raise its perceived cost to the actor. The penalty imposed is only one part of the cost. Administrative and litigation costs, damage to reputation, exposure to closer future surveillance and increased paperwork are additional forms of cost that regulators can and do impose on violations. In setting the level of penalties, it is important to keep these other costs in mind. Often they are large enough by themselves to achieve adequate deterrence.

4) Probability of Detection. The expected cost of committing a violation is also a function of the probability of getting caught. In setting the penalty level, one must consider whether the conduct involved is considered easy or hard to conceal from the regulator.

5) Positive and Negative Incentives. In principle deterrence can be achieved with either positive or negative enducements. That is, if one wishes someone not to do X, one can either pay him not to do it or punish him for doing it. Either way, you eliminate the advantage in doing X. Like the punishment, the payment can take many forms (money, services, reduced administrative or record-keeping burdens, praise, etc.). Most regulatory agencies are, however, severely constrained in their use of positive incentives. Direct subsidies require explicit statutory authorization and appropriations. Reduced administrative burdens typically mean reduced regulatory oversight and weakened enforcement. And praise is both suspect and politically dangerous.

B. Overall Evaluation of the NRC Policy

1. Performance

The NRCs present enforcement policy has been in effect, subject to minor modifications, since 1980. Has it had a deterrent effect? There is very little solid evidence on that score. What evidence we have takes two forms: statistical and impressionistic. Statistics on enforcement are difficult to assemble for various reasons. For one thing, there is no universally accepted measure of performance. The agency gathers various statistics that could be used as performance measures (e.g. SALP ratings, LERs, shutdowns,

downtime violations by severity level). But they are not gathered centrally nor are they systematically related to enforcement effort. Each of the possible performance indicators has obvious theoretical problems, and the underlying statistics are frequently incomplete or unreliable. Given its limited resources, the Committee could not significantly improve upon that state of affairs. It did ask the staff to prepare data on a sample of eleven generating plants chosen to be broadly representative of regions, vintages, and performance levels. The eleven included Arkansas, Browns Ferry, Brunswick, Calvert Cliffs, Kewaunee, Palisades, Pilgrim, Quad Cities, Rancho Seco, St. Lucie, and Surry. For each plant and generating unit data were gathered showing for each year since 1975 the number of inspection hours, violations (by severity level), civil penalties imposed (and dollar amount), orders, LERs, forced and scheduled outages (and hours), and SALP ratings. An analysis of this data revealed the following general conclusions:

Impressionistic information is not much more helpful in assessing the performance of the enforcement policy. Most commenters have strong opinions about various aspects of the policy. But few offered any solid evidence concerning its impact. Several utility witnesses claimed that they could not identify any particular practice or system that was adopted or modified in response to the policy's adoption in 1980. Many did claim that its excessively "punitive" quality did have an adverse effect on morale. But almost no one was willing to ascribe particular actions (such as employee resignations) to that morale problem. Nor could any witness convincingly separate out the effect of the enforcement policy from the generally heightened visibility and notoriety of the nuclear industry.

On the other hand one regional administrator stated emphatically that utilities go out of their way to avoid civil penalties or orders. The utilities' oft-repeated concern about the adverse publicity accompanying escalated enforcement actions lends credence to that assertion. Others conceded that escalated actions do succeed in "getting the attention of management."

The overall impression, then, seems to be that the policy's impact has been modest in magnitude and psychological in nature. It has made responsible personnel in the industry somewhat more cautious, circumspect, and nervous. Whether that translates into reduced risk of accident is an open question. Caution can breed care, but irritation can breed error.

2. Design

Lacking solid evidence on the actual impact of the enforce-

ment policy, the Committee has attempted to evaluate its design by applying the principles outlined in the preceding "Philosophy" section. Measured by those criteria, the Committee feels that the policy measures up well. The policy claims to base the severity of the sanction on the gravity of the violation. It is very difficult to confirm this claim, since the gravity of a violation depends on a host of factors peculiar to the particular context that only a trained inspector or engineer can fully assess. But the assignment of violations to severity levels seems on its face to be faithful to the gravity principle. So does the establishment of relative penalty levels for violations in different Supplements, although the margin for error here seems extremely large. Similarly, one senses in reading summaries of recent penalty cases that the size of the penalty generally reflects the seriousness of the health risk created. To the extent that this is an accurate reading of the NRC's practice, it sends the correct message to industry about relative costs: subjecting the public to larger risks will cost you more than subjecting it to smaller risks.

Whether the message is correct with regard to absolute costs is harder to evaluate. Are penalties high enough to provide the incremental deterrence needed? One cannot answer that question by looking at the design of the policy. One must look to extrinsic factors such as the strength of nonregulatory incentives and the magnitude of compliance costs.

The restriction of civil penalties to only the most serious

violations (Level Is, IIs, and some IIIs) does seem appropriate as a theoretical matter. Level IV and V violations together comprise over 90 percent of all cited violations (an even larger percentage of all detected violations since many are not formally cited). The administrative burden (on both NRC and industry) of imposing penalties on these violations would probably outweigh any resulting increment in deterrent impact. The administrative costs entailed in responding to those citations are themselves a form of "sanction" that holds these violations in check. Also, one must suppose that many level IV and V violations involve no measurable safety hazard. So long as they are corrected, further punishment would be gratuitous.

Secondly, the factors used by the policy to justify escalating or mitigating base penalties seem appropriate to a sound deterrence strategy. "Previous violation history" is a good indicator of the strength or weaknesses of nonregulatory incentives. Where the prior history is poor, the incentives are weak, and a larger penalty seems needed. For the same reason, "prior notice of the same event" warrants escalation. The "multiple occurrences" factor justifies escalation because it indicates both a higher gravity (the more occurrences, the higher the risk) and a greater propensity to commit violations (weaker nonregulatory incentives). "Prompt identification and reporting" and "unusually prompt corrective action" justify mitigation because they signify effective self-regulation (strong nonregulatory incentives). Finally, increasing penalties (or refusing to mitigate) for willful or repeated violations makes obvious sense.

While the Committee generally endorses the design of the NRC's enforcement policy, a number of questions have been raised and criticisms made that warrant fuller discussion. The following section addresses those concerns.

C.. Specific Issues

1. Positive Incentives. The policy has been extensively criticized as excessively "punitive" and "negative." The Committee is sympathetic with this concern, but doubts that much can be done about it. Truly "positive" incentives like subsidies are unavailable to the NRC. The NRC could bestow public praise on good performances, but there is an obvious danger of its being misinterpreted or distorted. More realistic are suggestions for reduction or mitigation of regulatory burdens. Elsewhere in this report we have endorsed the notion that frequency of inspection should be based on a licensee's performance. Since inspection is a form of regulatory burden, reduction in its frequency should be perceived as a "positive" incentive for good performance. Mitigation of penalties is another form of reduced burden. It is discussed below.

2. Number of Severity Levels. Some commenters propose that there should be fewer severity levels than the existing five. Some feel that there is no reason to distinguish between Levels IV and V (since both are treated alike: no penalty). Others combine this proposal with a proposal to eliminate all penalties for Level III violations (making it possible to consolidate IIIs, IVs and perhaps Vs).

The Committee does not support these proposals. In its view, the existing structure is ideal. There are enough categories to enable the staff to avoid the need to lump together violations posing wildly divergent levels of risk. Yet the number is small enough to be manageable. Moreover, each of the five levels serves a distinctive function in the structure of the enforcement program. (Vs are never treated as escalated enforcement actions; IVs are rarely so treated unless they involve repeated violations or a pattern of similar violations; IIIs are always escalated, but not always penalized; IIs are always subject to a base penalty, but may be mitigated; Is may never be mitigated.)

3. Classification of Violations by Level. Some commenters claim that the policy provides inadequate guidelines on classifying violations by severity level. Our attention was particularly drawn to the fuzzy criteria for making the crucial distinction between a III and a IV. The Committee agrees that many of the published criteria are indeed vague (see, e.g., Supplement I's distinction between a "significant violation" (III) and a "less significant violation" (IV)). We urge the NRC to accelerate efforts underway to give greater content to these distinctions, through written guidance, training, and selective headquarters review of regional practices involving Level IV and V violations. But we recognize that given the enormous range of regulated activities and contextual factors, gravity rating of violations necessarily involves a high degree of professional judgment. Bright-line guidelines will never be a substitute for careful selection, training, rotation, and supervision of regional inspectors.

4. Determination of Relative Base Penalties for the Various Supplements. The Supplements have been criticized for attempting to equate the incommensurable. There is no way, so the argument runs, to correlate, say, reactor operation violations with transportation violations. Table 1A of the policy, by assigning relative base penalties, attempts to do just that.

The Committee agrees that ranking violations by relative severity across activities is difficult. But so is ranking violations within activities. It may be difficult, but it is not impossible. Indeed it is impossible to avoid making such comparisons implicitly (by the relative penalties in fact assessed). We commend the NRC for making these comparisons somewhat more explicit than many regulators do. Whether the precise ranking system adopted by NRC is sensible is a much more difficult question. Several witnesses contended that there are no conceivable violations in, say, the health, physics or transportation area that could approach in gravity the Level I violations in reactor operations or construction. Consequently, they argue, there should be no level I (or even Level II) violations in the former categories.

The flaw in this argument is that it disregards probabilities. It may be true that a worst-case reactor disaster would dwarf in magnitude a worse-case transportation disaster. But the probability that such disasters might result from any particular violation may differ considerably. Since reactor requirements involve multiple redundant systems, the actual risk that a particular failure will cause an accident is extremely low in most cases. It may, therefore,

make perfectly good sense to equate (in terms of severity) the actual exposure of a person to radiation exceeding 0.5 rems (See Supplemental V, Level I) with, say, a exceeding a reactor Safety Limit (Supplement I, Level I). Whether this is so in fact undoubtedly depends on the circumstances.

The relative penalty levels appropriate for violations of different Supplements may also depend on other factors such as the relative strengths of nonregulatory incentives and the relative probabilities that violations will be detected. If, for example, transportation violations were much less likely to be detected than reactor violations, higher penalties would be needed in the former area to achieve comparable deterrence.

5. Removal of Economic Benefit. In an earlier version of the policy, the NRC proclaimed that "noncompliance should be more expressive than compliance." This has been softened to: "Sanctions should be designed to ensure that a licensee does not deliberately profit from violations of NRC requirements." The Committee subscribes to the philosophy of the original statement. That is, effective deterrence requires that the regulated population believe that noncompliance will cost more than compliance. This philosophy applies to any preventable violations, not just "deliberate" violations. The Committee concludes that, while few violations are "deliberate," most violations are "preventable" at least in the sense that their likelihood could have been reduced by the exercise of more effective supervision, auditing, or personnel development. By failing to install such a procedure, the violator has in effect "profited" by his wrong, and the purpose

of enforcement should be to eliminate that "profit". To the extent that the change in language in the 1985 policy suggests otherwise, the Committee regards it as unfortunate.

On the other hand, the Committee recognizes that actually measuring the "profit" in particular cases would often be extremely difficult. It is feasible where the violation consists of a failure to install an identified piece of equipment or system. The Environmental Protection Agency is able to use such a system because each pollution source must obtain a permit that specifies the pollution control equipment or systems required. The "benefit" approach is less workable, however, in dealing with one-shot violation of operating procedures. An attempt to estimate the "profit" in such cases would usually provoke controversy over what alternative procedures might have been used and how effective they would have been. A policy of computing the "profit" in all cases would therefore dramatically increase the administrative costs of enforcement and reduce its predictability. Consequently, the Committee endorses the practice of explicitly computing "profit" only in clear cases.

6. Ability to Pay. Lurking behind some criticism of the relative penalties assigned to different activities is a concern that penalties more explicitly reflect relative abilities to pay. A penalty of \$40,000 or even \$100,000 is small change to a large utility, but may be devastating to a materials licensee. The implication of such comments seems to be either that reactor penalties should be raised or nonreactor penalties lowered.

But this does not necessarily follow. As indicated above,

penalty levels should reflect other factors such as relative gravity of the violation and probabilities of detection. Moreover, penalties are only one component of noncompliance cost. The combined effect on a utility of a penalty, administrative costs, and adverse publicity can be very substantial. Also, since penalties may not be included in a regulated utility's cost of service, it is more likely to get the attention of management than a comparable cost item. Finally, to the extent that the nominal ceiling on penalties (\$100,000) is too "low" for large utilities, the NRC can (and sometimes does) use its "per diem" authority to generate much larger actual penalties for especially serious violations. The Committee urges the NRC to use this authority liberally to avoid the confinement of an artificial ceiling.

7. Nonpenalization of Level III Violations. Some commenters recommend that the NRC move further in the direction taken in 1984 by never issuing civil penalties for Level III violations. The Committee does not agree. In 1983 only seven violations were classified as Level I or Level II, representing only about one-half of one percent of all cited violations. In 1984 and 1985, the number has been even smaller. We question whether a system that issues so few penalties can maintain sufficient visibility and credibility. At least some Level III violations strike us as serious enough to warrant the imposition of at least a symbolic penalty. The 1984 policy has succeeded in significantly reducing the volume of small penalties (Level III penalties dropped from 48 in 1983 to 23 in 1984). A further reduction seems counterproductive.

8. Complete Mitigation for Self-Identified and-Corrected Violations. Related to the previous proposal is a proposal from several utilities that civil fines never be imposed for a violation identified and promptly corrected by the licensee. Existing policy allows a maximum 50 percent mitigation for each of these two factors. (This policy does not apply in the case of Level I violations where no mitigation is permitted. We will discuss the wisdom of this limitation in the next section.)

The Committee prefers the existing policy to the proposed change. Self-identification and correction are merely two factors among several that should go into the determination of a penalty. They should not, for example, totally excuse a poor prior history, prior notice of a similar event, or willfulness. A universal policy of giving licensees a free bite of the apple (so long as they identify and correct the violation) may create an excessive bias in favor of cure at the expense of prevention.

9. Nonmitigation of Level I Violations. The NRC's refusal to permit mitigation of Level I violations has been criticized as illogical. The Committee agrees. The theoretical and practical justifications for allowing mitigation apply with equal force to all violations, even the most severe. Since mitigation is based on a percentage of the base penalty, Level I penalties (even if mitigatable) will still be considerably higher than comparable Level II penalties, reflecting the former's greater severity. Allowing mitigation of Level I violations will also eliminate any incentive to misclassify a I as a II in order to give recognition to good performance.

10. Penalizing Individuals. The Committee heard very little support for the idea of imposing sanctions on individual employees or contractors of corporate licensees. Some commentators took the position that civil penalties should never be imposed on individuals; others, that they should be imposed only on licensed operators for particularly egregious violations.

The Committee subscribes to the more extreme view: civil penalties should never be imposed on individuals. Since most NRC requirements run to the corporate licensee, it is inappropriate to penalize individuals for contributing to violations of those requirements. It is up to the licensee to decide how best to meet its commitments. This includes deciding how to allocate responsibility and duties with the organization, how to select, train, and develop personnel, how to monitor their conduct and reward or punish them. Imposing NRC penalties directly on individuals inevitably interferes with that discretion. The NRC becomes drawn into managerial prerogatives, and employees are subjected to the demoralizing conundrum of having to serve two masters. Furthermore, the attempt to assign individual blame will often require prolonged inquiry.

This does not mean that the NRC is placed in the position of "condoning" individual wrongdoing. The corporate licensee is expected to take such remedial action as it feels appropriate, and that expectation is backed by the NRC's requirement that all violations be "corrected." Correction means taking action to prevent the violation's recurrence. If the licensee fails to discipline, retrain, or reassign an errant employee, the NRC can

refuse to mitigate the penalty or can even escalate the penalty for failure to take "prompt and extensive corrective action."

Licensed operators present a somewhat different case, since they have already been singled out for attention from the NRC. Arguably they owe individual obligations to the NRC which it can enforce directly. Since operators are licensed only to a particular facility, however, we feel that their primary supervision should come from management. Only if they exhibit a serious incapacity to discharge their licensed functions should they be subject to direct sanctions from the NRC. In that case, the appropriate sanction should be suspension or revocation of the license. Like a civil penalty, a license action imposes a direct financial cost on the operator. But it serves the added function of removing the licensee from regulated operations and thereby protecting the public.

11. Orders vs. Fines. Some witnesses recommend that the NRC make greater use of orders (and less use of penalties). Orders are perceived as more "remedial" and less "punitive." In fact there has been a modest increase in the use of orders of late. (There were 4 in 1982, 8 in 1983, 10 in 1984.) Still, they are comparatively infrequent.

The Committee takes no firm position on this issue. It is difficult to assess the value of orders in the abstract, since their value depends on their content and enforcibility. Orders can serve an educative function and, since their use imposes administrative (and perhaps publicity) costs on utilities, they can also serve a deterrent function. But orders require

specification of requirements to a degree that is not always feasible or wise. We have heard extensive criticism of technical specifications as excessively detailed and inflexible. We fear that widespread use of orders would compound these problems. The NRC ought generally to be moving in the direction of substituting performance (output) standards for engineering (input) standards. The former allow industry more room to "breathe" (to innovate and develop efficient solutions). Furthermore, orders like other requirements must be enforced. Eventually, NRC must be able to make a credible threat to impose costly sanctions on violators.

12. SALP Ratings. Like most things, SALP is good in theory but imperfect in execution. The main criticism seems to be based on the subjectivity of the ratings. SALP ratings are heavily influenced by resident inspectors who may have a limited or distorted perspective.

Some subjectivity is unavoidable in any rating system. The Committee agrees, however, that steps must be taken to reduce the impact of interpersonal subjectivity. All SALP ratings ought ideally to be done by the same group of people. Whatever their biases they will hopefully be applied consistently across the board. We therefore urge the NRC to reduce the influence of individual residents in the SALP process by making greater use of SALP rating teams that will rate several plants.

D. Data Collection

The Committee's difficulties in evaluating the performance of NRC's enforcement policy dramatizes the importance of establishing an ongoing system of collecting and evaluating data. The Committee does not mean to diminish either the difficulty of that endeavor nor the NRC's considerable accomplishments in this area to date. But more can and should be done.

As indicated earlier, NRC gathers extensive data on licensee performance that could conceivably be used as a basis for evaluating the success of enforcement. Most of these statistics suffer from the obvious drawback that they are only weakly responsive to variations in enforcement level or weakly related to the ultimate criterion of regulatory success -- safety. On balance, we feel that the best test of enforcement effectiveness is the extent of licensees' compliance with their substantive obligations. "Extent of compliance" must, of course, reflect both the quantitative and qualitative dimensions of compliance (how often did violations occur and how serious were they). The best existing measure of the latter is the severity levels assigned to violations by NRC inspectors. Using the severity levels one can compute a "noncompliance index" for any particular facility. The procedure would be to weight each violation by a percentage figure corresponding to its severity level (derived from Table 1B of the enforcement policy), and add the

resulting values for all violations in the sample. Index figures could be computed for an entire facility (e.g., generating unit) or for each of several activities conducted by a unit (corresponding to the Supplements). Then by tracking the movement of these index figures from year to year, one can roughly gauge the relative impact of enforcement efforts.

The Committee recognizes the shortcomings of this approach. First, the severity level classification system is only a very rough and imperfect measure of relative safety-significance of violations. But it is the best measure available. Obviously, NRC should continue to refine and improve it, whenever possible. Second, the violations detected by NRC (including those reported to it) do not comprise all nor necessarily a representative sample of the violations that actually exist. For this reason, NRC may wish to adjust each licensee's index figure by a factor representing the relative intensity of the NRC's regulatory oversight or the relative reliability of the licensee's self-detection and reporting program. Third, not all variations in noncompliance levels can be attributed to variations in enforcement. For that reason, NRC should count only those violations that are in principle preventable. But, as explained earlier, it should be doing that in any event. It is true that the level of compliance may vary because of independent changes in the strength of nonregulatory incentives (new state laws, changes in the insurance market, new management). But those are precisely the sort of events that NRC needs to know about. If compliance falls because those

incentives weaken, NRC must toughen its enforcement program accordingly. One may also object that no single measure of compliance (or noncompliance) can do justice to the wide variety of requirements (especially tech specs) applicable to different licensees. For that very reason we do not recommend using the "noncompliance index" to compare licensees (or plants or even units). Rather, it should be used to track the performance of any one licensee (plant or unit), over time.

This system requires that all preventable safety-significant violations be reported centrally. That may not presently be the case since an unknown number of Level IVs and Vs are never cited (as an inducement to self-regulation). Since the criteria for noncitation include self-detection, reporting and correction, omission of those violations is probably not a serious loss. Incorporating these violations in a performance index might well reduce the incentive for effective self-regulation. Another obstacle is the fact that Level IV and V violations are not routinely reported to headquarters. But that is not a serious problem, since data on those violations are captured in the 766 system. Presumably the system can be easily modified to report and present the data in an appropriate format and to the appropriate officials in IE HQ.

INSPECTOR SELECTION, TRAINING AND EVALUATION

NRC has established a program for the selection, training and evaluation of inspectors to meet two basic and essential objectives:

- To ensure that inspections meet minimum knowledge and qualification standards, and
- To maintain inspector qualifications and training in general conformance to standards for comparable job activities in the nuclear industry.

SELECTION

Hiring of inspectors in general* follows the standard process utilized by other federal agencies. Career opportunity announcements are listed in NRC Form 114 with a description of duties. The form also lists qualifications required by the job and the rating factors that are utilized to evaluate the candidate. Interested candidates apply through the submission of a personal qualifications statement, SF 171, and a vacancy application status notice, NRC Form 115.

Basically, three types of appointments are made:

Resident Inspector, Senior Resident Inspector and Regional Inspector. The first two types of inspectors must have been an NRC employee for six months and two years, respectively. This is advantageous in that appointments can take into account actual performance on the job. Regional inspectors can be a new employee.

TRAINING

Newly hired personnel seldom possess all of the required qualifications. Therefore, both formal class room training, as stipulated in an Inspection and Employment Manual, (Chapter 1231) and on-the-job training are utilized to ensure that the necessary knowledge is acquired.

Each inspector must attend the required training or verify through successful completion of a written equivalency examination the desired level of knowledge in the inspector's specialty, such as Radiological Safety Inspection.

* Certain positions require that the candidate already be an NRC employee.

The passing grade for each course, series of courses, or equivalency examination is 70%. It is puzzling to note that the passing grade for licensing of operators is 85% - a case where the pass-fail criterion for the inspectors is less than those of the inspected, i.e. operators.

Other requirements, such as oral boards or regional training, may be used to supplement or enhance training. For example, there is a training manual, "IE Training and Qualifications Journal" that goes with IE 1231. Upon completion of the training journal, the region may convene a "Board" to give the candidate an oral examination. Upon the Board's recommendation, the inspector is certified.

Neither the composition of the Board nor its process is standardized. Two regions utilize formal boards, two regions do not utilize boards at all, and a fifth region utilizes an informal process wherein one regional representative conducts a walk-through evaluation. Little is known about the reliability and validity of either the formal or informal board evaluation process.

All newly hired personnel and assignees are required to complete the training activities or take and pass equivalency examinations within the first 24 months of being assigned.

In general, only those inspectors who have successfully completed the required training will be allowed to perform inspections. However, if regional management evaluates the background and performance of an individual inspector and concludes that the inspector has demonstrated an ability to perform inspections in specific areas, even though the required training has not been completed, the Regional Administration can authorize the individual to perform inspections in those areas.

EVALUATION

Performance evaluations are accomplished by standardized annual appraisals. This evaluation puts major emphasis on objectivity as described by a chapter in the IE Manual. The emphasis upon objectivity leaves the impression that deficiencies in other areas; such as job knowledge, work habits, communications ~~skills~~ skills and accuracy of findings, can be forgiven as long as objectivity is maintained. c

In summary, NRC has put in place a program for hiring, training and evaluating inspectors so as to achieve policy objectives of assuring the competence necessary for inspectors to discharge position requirements in an effective manner.

Overall, the program is apparently working well but could possibly be made even better. Accordingly, it is recommended that NRC carefully evaluate three aspects of the current process with the possibility of revision:

- Raise passing scores for training courses and equivalency examinations to the same passing score required of operators.
- Disallow individuals to conduct inspections as the primary inspector who have not passed the required training or equivalency examination. (This would not preclude an individual assisting in an inspection under the direct supervision of a qualified inspector).
- The rationale of utilizing or not utilizing boards should be thoroughly reviewed with the objective of establishing standardization. If boards are to be utilized, a sampling of board actions should be carefully examined to assure that the original intent and process are being stringently fulfilled and that a looseness has not infiltrated the process that would preclude the achievement of validity and reliability.

State as in qualified inspectors,

you endorsement

II. GENERAL COMMENTS

A. A Brief Description of Current Program

The NRC enforcement program is intended to "promote and protect the radiological health and safety of the public, including employee's health and safety, the common defense and security, and the environment." With ^{some} ~~very limited~~ exceptions, whenever noncompliance with NRC requirements is identified, enforcement action is taken. Principal tools^{NOVS} in the enforcement actions are orders and fines. Violations are categorized in terms of five levels of severity to reflect their relative importance.

~~Normally,~~ Dependent upon the seriousness of the violation, a civil penalty in the form of a monetary fine ^{maybe} ~~is~~ levied. The intent of the fine is to assure prompt corrective action and to deter future noncompliance. The severity of fines was significantly increased in 198² by Congress upon the recommendation of the NRC. The rationale for the increase was that the heavier fines would ^{detour} ~~result in fewer~~ violations. In actuality, there was an increase in the number of violations in both 1982 and 1983, as contrasted with prior years, which cannot be explained merely by the larger number of plants becoming operational. delete

B. Perceptual Differences between the Regulators and the Regulated.

Unfortunately, existing regulatory practice has resulted in almost a completely diametrical viewpoint between the regulators

and utility sources (per, for example, the Federal Register Vol. 47, No. 46, March 9, 1982). The regulators believe their actions are effectively serving the public interest. The utilities, while accepting the fact that they are working in a regulated environment, contend that there has been some unintended consequences of the regulatory process which are counter productive to the intended objective and assert that a system which is supposed to be corrective has, in fact, become frequently punitive and adversarial in nature. The intensity of utilities reaction to the current system is indicative of the dissonant and discordant impact of the current system as perceived from their vantage point.

Both regulators and owners share the common goal of plant and public safety; the problem is how best to achieve it. While continued fine tuning in the program will be required to establish a truly effective team effort, this paper addresses key issues contributing to problems in the current program and offers recommendations for the consideration of the NRC which the Study Committee believes would contribute to more optimum results.

C. Summary of Public Comments

A terse summary of salient utility comments is given below. Topics covered by these comments will be treated later on in this report in greater detail.

- o Material False Statement

The current policy on material false statement has had a chilling effect on timely and accurate communications which inhibits a free and open flow of communications so important to an effective program. It is perceived by most utilities as being extremely sensitive, counter productive and either the first or second priority issue requiring resolution.

- o Enforcement Philosophy

Enforcement philosophy is based almost exclusively on a punitive system and too little recognition is given to good performance and effective licensee audit programs.

- o Inadequate Distinction Between Severity Levels

There is a lack of clarity in the example of violations in the supplements and there are inadequate distinctions between severity levels assigned to violations in the various activity areas. Utilities feel they are in a no-win posture and that penalties are inevitable regardless of diligence because NRC seeks perfection rather than excellence and fails to consider extenuating circumstances or exemplary past performance.

In addition, NRC frequently is seen as guilty of exercising arbitrary powers unchecked by an effective oversight. Management conferences, which could be a very effective tool if conducted in an open and free exchange process, are too often characterized by an arbitrary and hostile attitude being displayed by the NRC representatives.

- o Mitigation Factors

More recently NRC has seen fit to increase the frequency of appropriate mitigation actions, i.e., 50% for prompt identification and reporting and 50% for prompt corrective action. The utilities have lauded this action as a step in the right direction but complain about the exclusion of severity Level 1 cases for mitigation consideration.

- o Consistency Between Regions

Inconsistency between regions is perceived as a major problem and there is general agreement within the NRC that consistency would be desirable. Regions have authority to initiate routine enforcement actions but, due to differences in philosophy and the lack of standard operating procedures, an event judged to be a violation in one region may not be evaluated as a

violation in another region. ~~The turn-over of member~~
~~of the NRC Commission and their differences regarding~~
~~regulatory philosophy is perceived as a contributing~~
~~factor in the lack of a standard policy throughout all~~
~~regions.~~

o Enforcement Publicity

Current enforcement publicity emphasizes the negative and sends a false message to the public at large that utility managers are inept or dishonest (or both) and impairs confidence in the industry. The negative publicity has a deleterious impact upon morale and, as currently conducted, can result in a single enforcement being given a negative press two or three times. Utilities appear to be as much or more concerned about negative publicity than fines per se.

o Tech Spec Problems

There has been a proliferation of Tech Spec^s₁ since the infamous TMI ⁻²~~N~~ incident. Utilities claim that some of the tech specs are not safety significant and others are almost unintelligible. NRC agrees that tech specs need cleaning up but, due to constrained resources, estimates that it would require ten years. Violation of a tech spec can result in a violation and fine. Utilities

claim that it is inevitable that some tech spec will be violated and particularly when a violation is a matter of broad interpretation.

o Imposition of Sanctions Directly on Individuals

This issue is unresolved. Utilities desire ~~responsibility~~ responsibility to manage their own personnel and oppose the imposition of sanctions directly on individuals. Since causal factors of violations are sometimes multiple in nature, it is difficult to ^{affix} ~~affix~~ responsibility to just one person. If done at all, it should be for a malicious or willful act for which the utility has been exonerated.

o Morale of Licensees and Their Employers

Negative publicity is not counterbalanced with recognition about all the things that are done right. Too little recognition and reward are given for good performance. Rather, there are thousands of opportunities but made one mistake and you are nailed. One very objectionable characteristic of the present system is untimely action; a problem is identified and corrected and a fine, with all the attendant negative publicity, comes along several months later which is particularly deleterious to morale in local communities. The

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frustrations from regulators pressure has contributed to some degree to employee attrition.

o Collection, Analysis, Reporting of Data

The current program is perceived as being largely reactive to isolated individual cases which do not lead to long-term, broad-scale corrective actions. More emphasis should be placed on identifying root causes and a pragmatic approach with emphasis upon prevention.

III. DISCUSSION OF SPECIFIC ISSUES

A. Technical Specifications

Until 1974, all nuclear power plants had "custom" technical specifications; there was no consistent stand^{and} and format. In 1974, the NRC implemented Standard Technical Specifications (STS). Since 1974, and particularly since TMI, several sets of changes to the technical specifications ~~were~~^{have been} made to (1) implement new requirements, (2) keep the technical specifications up-to-date with plant modifications, or (3) to make improvement^s based on requests by the licensee.

The growth of technical specification requirements over the years has brought problems with it. Some of the tech specs are almost unintelligible and are subject to broad interpretation which can

vary significantly as a function of the training and experience of the individual making the interpretation. In addition, utilities contend that many specs are not safety significant. Furthermore, some utilities ^{claim to have} accept poor tech specs so as not to prejudice their chance for license. The NRC agrees that the tech specs need to be cleaned up but, either out of inertia or inadequate resources (or both), have taken no tangible steps to introduce reform. An NRC estimate to effect the necessary reform is ten years.

Part of the problem apparently is the lack of explicit guidance and direction from the commission. There has been talk about tech spec reform but little if anything has been done about it.

In the meantime, both the utilities and NRC must live with tech spec deficiencies.

Spell out implications for enforcement

B. Root Causes - Effectiveness of Dissemination

The major
A principal objective of the NRC ~~mission~~ ^{*enforcement program*} is to identify why violations occur and to disseminate guidance and information so as to preclude their reoccurrence. Unfortunately, this objective is not being met to the degree of efficiency that it should. In many cases, the root causes of violations are very complex and may constitute multiple variables; design, communications, training, procedures, human error, etc. The enforcement policy supposedly focuses on the fundamental problems and root causes of violations which in turn necessitates the acquisition of a lot of

facts whenever an individual item of noncompliance is identified--the who, what, why, where, and when regarding the violation. While there is guidance to the inspectors in a manual on how to ~~conduct~~^{develop} enforcement actions and how to write an inspection report, there is not a standard form designed to capture all the necessary information, nor is there any coding in inspection reports at all. Citations are tracked in a computer system but the total information needed for analysis to determine root causes may be on different documents in different places in lieu of a standardized format for input into a computer-based data system amenable to effective analysis. NRC makes extensive use of a computer-based data system on inspection reports called the 766 Form. This form reflects the readout of the licensee's enforcement history, the text of the violation, the requirement that was violated, and will categorize what the severity level was. It does not, however, address root causes. ~~As~~^{Has} NRC is currently structured, the major source for root cause analysis appears to be the office for Analysis and Evaluation of Operational Data (AEOD). The objective of the office is to collect, screen, analyze and feed back operational experience or data to the NRC, the industry, and to the public. The AEOD has access to a large number of reports from the industry and foreign event reports based upon bilateral agreements. A principal source of information is the Licensee Event Report (LER)--a report which documents reportable events occurring at the operating facilities. Over 2000 LER's were received in 1984. However, the looseness of the reporting format was such that the

LER's were practically worthless in determining root causes before 1984. In recognition of the dominance of the human element in many of the reported events, the LER system was modified in January 1984 to get better information on human factors variables contributing to the event. Even though the NRC does not get good information with every LER, the system has improved and the AEOD is generally successful in deriving root causes ^{of events} ~~for violations~~ involving equipment and hardware but are less successful for the people oriented ^{events} ~~violations~~, i.e., human error. Currently, the analysts in AEOD represent a partial multidisciplinary capability but they have only a limited capability in human factors. When queried if it would not be advantageous to bolster the capability by adding human factors specialists, the answer was rather surprising in view of the large number of human factors specialists available. "We'd very much like to. Those people are very hard to find." That something needs to be done is evidenced by the fact that a study of significant events in 1983 by AEOD and INPO concluded that the incidence of human error was around 40% and was particularly prevalent in the test and surveillance area.

In conclusion, it is the belief of this committee that the NRC's ^{regulatory program} ~~enforcement policy~~ would be more effective if it concentrated more on the identification of root causes and ^{corrective} ~~corrective~~ actions ~~and less on punitive actions including civil penalties~~. Root cause identification could be enhanced by promoting and encouraging a cooperative atmosphere between the NRC and the utilities.

which would be characterized through day to day interface, better/more frequent use of management conferences and enforcement conferences with free and open exchange between the NRC and the licensees.

A large number of reports are disseminated by the NRC, such as notices, bulletins, circulars, generic letters, and a series of summaries, for example, of abnormal operational events and the information notice process. The apparent problems with these releases, as reflected by the recipient utilities, is the frequent lack of timeliness and in many cases, the lack of identification of root causes and appropriate explicit solutions. Industry interaction in other ways (such as pertinent news releases and shared information between utilities) and the issuance of good practices by INPO are helpful and constructive and these efforts should be accelerated along with a parallel effort by the NRC to issue more timely releases with explicit recommended corrective actions.

C. Inspection Policy & Staffing, Training and Rotation

The purpose of the inspection program is to verify that licensees are meeting their commitments and regulatory programs and approximately one-third of NRC's resources are directed to the inspection program. This includes the actual inspection, the development of programs and procedures to carry out the programs, and support to the actual on-scene inspection. The inspection

program is managed by the Office of Inspection and Enforcement and involves the five regions as well as some direct inspections via special teams out of the Office of Inspection and Enforcement. However, the bulk of the inspections are carried out by regionally based inspectors and resident personnel.

Another way in which violations are identified is when the licensee himself identifies the problem and reports to the NRC. To the surprise of this committee, the NRC staff could not identify the percentage of violations identified by the NRC inspectors and those identified by the licensees^p themselves. Obviously, the inspection^{ion} program for optimum success depends on the contribution of both the NRC and the licensees^s. One highly placed NRC official reported that it was his belief that the majority of violations reports were reported by the licensees.

Finally, the last way that violations are identified is through the process of allegations and subsequent follow-up of those allegations by either the investigative staff or the inspection staff. It is NRC policy neither to encourageⁿ or discourageⁿ allegation reporting but, upon receipt, allegations are systematically evaluated.

of resident inspectors
In concern for a potential loss of objectivity, the NRC had a policy originally of frequent rotation, but the NRC has now satisfied itself that loss of objectivity is not a problem and most inspectors now stay on their assignments for at least five

years. It is difficult to say whether this policy is predicated on the cost of relocation or inspector efficiency. The NRC staff contends that while there are no standards or quotas, they can "smell" it when there has been a lapse of objectivity or efficiency--an interesting claim not founded in scientific rigor. There seems to be a problem of burnout and the feeling of some inspectors that confinement to one plant does not give them the proper frame of reference for comparative purposes when they are only familiar with one plant. Another complaint is that the volume of paper work reduces the time available for actual inspection activities and that there is in effect a "quasi" quota system which is contradictory to official policy, i.e., in the absence of reported violations the resident inspector is likely to receive questioning phone calls.

A major problem seems to exist in the area of materials licensees, i.e., fuel facilities, uranium mills, new fuel production plants, hospitals, and other industrial users of uranium products. There are roughly 8000 licensees of this type licensed by the NRC throughout the United States. The NRC tries to look at those with the most significant quantities of radioactive material and those that represent potentially the greatest threat to public health and safety. Those licensees in these areas are inspected usually about once a year, but in the case of other materials licensees it may be years before they are inspected by the NRC. This program, like the reactors, also depends upon voluntary reporting.

Another complication in the materials licensee category is that, in addition to the approximate 8000 cases where the license is issued by NRC, there are that many again where the licenses are issued by agreement states. By NRC's admission, they have not looked at this total population of users of regulated nuclear materials to derive an evaluative conclusion of the quality of conduct with regard to the agreement state licensees and the NRC licensees. They do, however, coordinate their activities with agreement states.

Furthermore, it is a requirement that the NRC judge the comparability of agreement states programs to the NRC programs. This would apparently mean that NRC should have in hand a sufficient body of information, not now available, that can be evaluated so as to ^{be} able to form judgments about the quality and comparability of the agreement states programs, i.e., number of enforcement actions, and the magnitude and scope of problems which are surfaced.

In addition to the inspections discussed above, NRC also makes use of SALP (Systematic Assessment of Licensee Performance) ratings as a generic evaluation of the ^{power reactor} licensee in areas such as operations, radiological controls, quality assurance, and safety. SALP ratings, while not necessarily a violation, are perceived and used as a vehicle for effective dialogue with the licensee about his problems.

The inspection system of operational plants generates thousands of notices of violation annually which are candidates for fines. The largest number of notices of violation involve severity level 4 and 5 violations which are issued routinely by the regional inspection process. These violations are not reviewed by the ^{headquarters} NRC staff before they are issued. It is estimated that there are 1000 to 2000 notices issued annually not previously seen by the office of I and E. The I and E staff has, in recent months, been getting copies of the notices to do some kind of auditing as to what is going on but, because of the large number of notices and a small staff, it is difficult for I & E to get a handle on it. The problem of inconsistencies on the overall program between regions is therefore complicated by the fact that I & E does not have a good fix on the direction and consistency of the regions in regards to severity level 4 and 5 cases. NRC "thinks" they have reasonable consistency on 4 & 5, but no steps have been taken to assure that there is a relatively even-handed perception and applications of the 4 & 5's among the regions. I & E justifies this situation by the fact that they have a limited number of personnel and cannot look at everything. However, it is significant to note that when an initial effort was made to try to smooth out inconsistencies, or at least reduce strong differences, the effort was discontinued with the encouragement of the commission who wanted it to be essentially a regional program.

*Incorporated
Regional
Staff*

Adequacy of Resources

On the surface, at least, a case can be made that more resources could be advantageously utilized in the enforcement program. Four problem areas discussed above continue without resolution wherein more resources, carefully selected and effectively utilized, could have a positive impact. These problem areas are: the achievement of consistency between the regions in the perception and interpretation of regulatory policy,*cleaning up a voluminous and frequently unintelligible tech spec file, a more effective and multidisciplinary analysis of violations so as to determine root causes, and a more frequent and effective evaluation of the quality of inspection programs in the material licensee category--both those licensed by the NRC and those issued by agreement states. There is no question that the mandatory activities in the material licenses area must continue and require NRC responses apart from responsibilities for operating plants.

A fundamental question regarding more resources is the impact of these additional resources on improvement in safety.

Unfortunately, there does not seem to be a direct answer to this question since there are no quantifiable performance criteria to determine the efficacy of the current program and if current resources are being optimally utilized. Valuable resources, both NRC and the utilities, are being dissipated by undue emphasis on problems of minor significance. Level V violations are very

numerous and normally receive no attention except by the licensee cited. However, they still require experienced manpower to support and respond to the activity. Calling these events deviations, rather than violations, and resolving at the local levels without volumes of formal paperwork could represent a potential for significant savings of resources. In other words, if a licensee has an acceptable program for identifying and evaluating deviations and taking corrective actions, these category V events would be treated as nonconforming* deviations and resolved locally without all the attendant paper work associated with a violation.

Reducing the frequency of inspections at plants with good performance records and increasing the frequency at plants with poor records could be a more effective use of resources while serving as a important motivator to plant managements. In addition, it would concentrate attention on licensees who are in need of increased guidance and assistance. The emphasis would also shift appropriately to prevention rather than after-the-fact fixes. To negate any possible lethargy and to maintain the viability of this approach as an incentive, a reasonable minimum of frequencies should apply to all licensees.

General { A fundamental question should concentrate on the focus of the inspection process and are manpower resources being effectively utilized? For example, is there a lot of inspection activity going on in areas that do not accrue major benefits in regard to

safety? Are there existing regulatory requirements which can be eliminated that have a marginal importance to safety? Would it be effective to divert more manpower to the establishment of a viable preventive enforcement program rather than ^{to} ~~the expenditure~~ of these resources in after-the-fact investigations? (Very little is being done in preventive enforcement at the present time due to limited resources.)

In summary there seems to be little doubt that the enforcement program could utilize more resources. However, probing cost-benefit analyses should be conducted to assess the priorities for generic safety issues, the need for new regulations and the deletions of marginal requirements, and the overall effective utilization of manpower resources. Questions other than those posed in the prior paragraph will undoubtedly surface as a result of a thorough study of the resources issue.

Management Structure

Since the 1979 TMI accident, a number of reports and studies have questioned or been critical of the NRC management structure and organization of the NRC. One report stated the NRC "is not so badly managed as it is not managed at all."

A recently completed study, the Bevill Report, concluded that the organization and management of NRC is a blueprint for regulatory paralysis and that the collegial decision making of the 5 ~~men~~ ^{person}

commission is a fiction. Instead, "personal hidden agendas" held by individual commissions thwart collegiality, sow distrust at the highest agency levels, and sends mixed and confused messages to the major staffs and employees. Finally, there appears to be a lack of a clear understanding, voiced by many former and present commissioners^s as to their roles, responsibilities, and authority. Certainly, while the chairman of the Commission is perceived as an official spokesperson for the agency, there are few commissioner decisions, opinions, or letters sent to Congress which do not include minority or dissenting opinions from individual commissioners. A case in point is the single administrator concept as an alternate to the current 5-man commission.

A second major finding of the Bevill Report is that there exists a costly lack of discipline. The agency staff, composed of four major program offices, is almost a separate entity within the NRC and lends credence to the allegation that the NRC is managed bottom-up. An example of this is the regional approach wherein each region is managed like a fiefdom, which represents the personal philosophy and perceptions of the five regional administrations.

A clear case of lack of discipline and control and consistent policy is represented by backfitting. Backfitting, an over-reaction to TMI II, has run into the hundreds of millions of dollars for some plants. For example, Beaver Valley faces increased costs of over \$200 million for 15 backfits. Unfor-

Unfortunately, however, there did not exist immediately after TMI II a master, well-coordinated, carefully formulated scheme for the imposition of backfits. Instead, they were levied by many different levels of the NRC: on-site NRC inspectors, regional inspectors, and management officials, and by staff reviewers. Collectively, these levies have represented personal interpretations of licensing requirements and their own criteria for operations.

The NRC, at least in some instances, also overreacted and overprescribed licensing requirements as a consequence of TMI II. Two examples support this contention: (a) The TMI accident had 3 or 4 known causes and yet NRC prescribed 180 new requirements and (b) in accordance with 1972 technical specification requirements, a licensee performed 390 surveillance tests per year; in 1984, the number had mushroomed to 14,000 surveillance tests per year.

The NRC, to their credit, has recognized these problems and now has a regulatory review process based on cost-benefit analyses to judge whether a new requirement should be imposed or not.

In the case of backfits, two actions have been taken (or proposed) to correct admitted deficiencies. First, the responsibility for backfitting activities has been placed in the hands of the Executive Director for Operations; something that has not existed before. Secondly, NRC has proposed and received comments on a new backfitting rule, which should significantly improve

backfitting procedure by requiring cost-benefit analysis unless the Director of Nuclear Reactor Regulation feels that there is an urgent need to take care of an important safety problem at a particular plant. NRC "hopes" to implement this rule in the near future after all the comments have been received and digested.

Testimony from key NRC personnel also reveals a good appreciation of the fact that the system must strive for excellence rather than perfection, ^{and} ~~and~~ that a proliferation of small civil penalties may be counterproductive by diverting the skills and talents of key personnel, in preparing and responding to the paper work, away from more important safety matters.

Since many of the fundamental deficiencies of the NRC as an agency are traceable directly or indirectly to the Commission, it is appropriate to look at some of the circumstances under which they must work. The commissioners themselves are highly motivated and possess eminent professional qualifications in one or more technical areas. However, their actions and effectiveness are significantly influenced by laws which, while well intended, have had a counterproductive effect on the collegial process.

The first of these is the Sunshine Act which, as currently interpreted, means that the Commission cannot meet as a body to hold evaluative discussions and resolve differences except in public sessions. Since the resolution of differences is a give-and-take

trade-off process, holding the sessions in public has a constraining influence and hampers the effectiveness of the collegial process.

The second major constraint is the ex parte considerations which, in practice, does not allow the commissioners to make fully effective use of the abundant technical talent within the NRC in directly advising the commissioners on specific cases. The staff is a technical resource that should be available to the commissioners without overly restrictive legal constraints.

The relaxation of the restrictions should have a positive impact upon the achievement of the rationale for the collegial process. This committee did not have the time nor resources to examine the pros and cons of all alternative approaches to the present commission structure. These alternatives include: single administrator, 3-man commission, and possibly one commissioner with a technical advisory staff analogous to an industry CEO with a staff or a Board of Directors. A specific study of this issue may be necessary to spell out all options and the pros and cons of each. Less elusive, however, is the need for consolidation of NRC facilities. The NRC headquarters staff is spread out in eleven different buildings throughout the Washington, D.C. metropolitan area. This involves a valuable waste of resources in the expensive and time-consuming process of traveling between these locations. Both the Kemeny report and the Grace Commission have urged geographic consolidation, and

this committee report strongly endorses those recommendations.

In summary, NRC has recognized and is taking action about some problem areas (such as a more deliberate approach to backfitting and new requirements), have recognized but are dependent upon Congress or other agencies for resolution of some problems (Sunshine Act, Ex Parte, facility consolidation). The NRC should, however, initiate more careful analysis and study so as to maximize total manpower efficiency. Particular attention should be given to the priority significance to safety as regards the focus of inspections. Guidance and training programs should be initiated to achieve more consistency between regions.

Overall Impression of Effectiveness of Policy

The Bevill report contains the following statement, "The concern is not only with the waste of the taxpayers' money on a poorly functioning agency but, more importantly, the increased cost to the ratepayers for the energy they require, the demise or at least postponement, of the nuclear option, and most importantly, the possibility that NRC actions are making plants less safe."

~~Unfortunately,~~ ^A assertions about the effectiveness of the enforcement policy and its impact on safety ^{are} largely subjective in the absence of quantifiable performance criteria. With the exception of exposure to radiation by personnel who work in the material licensing area, where there is documentation that exposure has

been reduced, other conclusions concerning safety are largely subjective in nature.

It is the opinion of this committee that the lack of an attempt to derive quantifiable performance criteria, by which the overall effectiveness of the program can be judged, represents a serious omission. Admittedly, this is a difficult task but, with advanced psychometric techniques and modern computers, it is believed to be amenable to solution.

Four parameters are tracked by all French nuclear plants:

- o Equivalent availability
- o Forced outage rate
- o Number of planned outage days
- o Load rejection rate (load rejects without scrams)

The French parameters are obviously more related to plant effectiveness than safety. Other candidates, more specifically related to safety, which could and should be evaluated for feasibility, might include:

- o Unplanned automatic scrams

- o Workers exceeding radiation exposure limits (5 rems/yr)
- o Average total radiation dose per plants
- o Lost time accident rate
- o Incident of human errors

A concentrated effort in this area would undoubtedly unearth other candidates.

In the absence of currently existing quantifiable performance criteria, subjective judgments must be exercised to assess the current effectiveness of the system. Following this approach, a list of unweighted positives and negatives regarding the enforcement program can be derived.

Positive

There is no question that an enforcement policy is required since there are a percentage of plants (probably 10 to 15 %) that must be forced to discharge their responsibilities and by the admission of at least one utility who was heavily fined, "The fine really got our attention."

A major deficiency identified by the Kemeny Commission, inadequate training, has been vigorously addressed by both the

NRC and INPO to the degree that it can be confidently concluded that training has been strengthened and improved. For example, with the effective use of task analysis, explicit training requirements have been identified so that training is not only more thorough and efficient but, by being specifically related to performance requirements, is also more cost-effective.

The licensing process has been evaluated and improvements have been made and work continues apace to effect further improvements.

Procedures, and particularly emergency procedures, have been improved.

Maintenance has finally been recognized for its importance and is now receiving accelerated and overdue attention. The industry has established a high level NUMARC 4 Committee to work cooperatively with the NRC to further address and resolve problems in this area. For example, more emphasis is being given to preventative maintenance. New, improved operators' aids, such as the SPDS, have been derived and are being implemented. These aids help to reduce the stress and workload of the operator, and thereby make the operator more effective in both normal and emergency operations. Some of the more flagrant human engineering design deficiencies identified by the Kemeny Commission and Rogovin reports have and are being corrected, i.e., improved labeling, color, and shape coding of instruments and controls;

improved environmental conditions; improved layout of panels and consoles; improved communications, etc. Research continues to effect further improvements in annunciator alarm systems, the use of CRTs, and computer-generated display systems.

The NRC has recently seen fit to reward good performance (prompt identification and correction of problems) by more extensive use of mitigation of fines with the exception of Category I fines which, for some inexplicable reason, is still disallowed.

Negatives

Despite the fact that the overall efficiency of the program depends upon the best efforts of both the NRC and the licensees, the NRC cannot answer the question as to the number of violations that were identified by the licensees.

No attempt was made to study the enforcement policies of foreign countries and attempt to adapt some of their best features. At the request of this committee, a quick survey, via use of questionnaire, was made of the major countries with operating reactors with which signed information exchange agreements exists. Timely responses were received from France, Federal Republic of Germany, the United Kingdom, Sweden, Switzerland, Belgium, The Netherlands, Japan, and Korea; Taiwan was expected to reply at a later date. Results from this survey reflect the fact that the respondents find the "adversary" approach in the

United States difficult, if not impossible, to understand. The foreign regulatory agencies primarily view themselves with pride as working as part of a total nuclear team working in the best interests of their country. In this context, the regulatory agency works hand in hand with industry rather than distancing itself from it.

The current enforcement policy does not go far enough to use the regulatory process as a means of constructive interface between the NRC and the licenses to maximize the safety and reliability of the plant, and seems to ignore that the greatest incentive of all for the detection and correction of potential violations is the owner's concern for its substantial capital investment in plant and equipment and the protection of its own employees and reputation.

Despite the continuing responsiveness of the utilities to queries from the NRC regarding the enforcement policy (starting in 1982), the NRC has, in the main, chosen to ignore these learned and thoughtful inputs and perceptions. A case in point is the very sensitive issue of material false statement wherein the utilities have consistently pointed out that it has had a chilling effect on the timely inputs so vital to the identification and resolution of safety-oriented problems. Despite the intensity of these utility inputs, no positive corrective action has been taken by the NRC.

The current policy has helped promote a public perception that nuclear power is unsafe and that plants are not operated any safer today than at the time of the Three Mile Accident. Rather than a policy to educate the public and political bodies of the country of the safety of nuclear power, so essential to the future viability of the industry, the current policy is too punitive in nature. The reward for prompt reporting is the probability that these reports will be converted into written violations, escalated enforcement actions, poor SALP reviews, fines, and negative press releases. By contrast, it is likely that a policy with a focus on root cause, identification, and positive incentives will improve overall enforcement and minimize the need for NRC sanctions except in isolated cases of non-responsible, noncooperative licensees. Even in these cases, orders are perceived as being more effective than fines.

A number of deficiencies or problems have been previously identified and reported elsewhere in this report. In terse summary, the most salient ones are:

- ✗ Lack of effective discipline and central direction and control.
- o A very sensitive Material False Statement issue has not been resolved.
- o Lack of quantifiable performance indicators.

- o Root cause identification has not been addressed on an extensive, systematic basis.

- o ^{A perceived} ~~The~~ emphasis on punitive measures has created an adversarial relationship between the NRC and licensees.

- o A recognized problem with Tech Specs ^{has} ~~is~~ not receiving appropriate attention.

- o No systematic effort has been made to study foreign enforcement program and adapt their better features.

- ~~x~~ Too little emphasis placed on preventive enforcement.

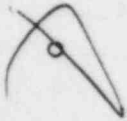
- ~~x~~ Lack of clarity in the example of violations in the supplements.

- ~~x~~ Inadequate distinctions between severity levels.

- ~~x~~ ~~Too little and ineffectual use of management conferences.~~

- o Negative publicity releases have sent false messages to the public and impaired public confidence in the industry, and has had a deleterious impact upon morale of the managers and technical personnel who must operate

and maintain the plants.



Too much emphasis upon insignificant and trivial events.

Within constraints of time and resources, this report does not attempt to restructure or rewrite a revised enforcement policy in explicit detail. However, it is believed that a restructure of the policy to establish an improved environmental climate that is both equitable and acceptable to the licensees would improve overall effectiveness. Since overall effectiveness is also inextricably related to safety, it follows that safety should also be enhanced. The framework for such a system would have the following characteristics:

- o Establish quantifiable performance indicators.
- o Establish and maintain timely and open communications channels.
- ~~o~~ Differentiate and concentrate on real safety concerns with deemphasis upon trivial and insignificant events.
- o Reward timely identification and correction of problems for all severity levels.
- o Reduce regional inconsistencies through improved training and the formulation of standard operating

policies and procedures.

- ✕ Recognize utilities innate interests, investment, and responsibilities and afford them more flexibility to conduct their programs.
- o/ Put more emphasis on a more pragmatic approach with more attention to prevention and less emphasis upon after-the-fact actions, which are punitive in nature and frequently untimely.
- o Make expanded use of management conferences.
- ✕ For the small percentage of hard-core problem utilities, make more frequent and effective use of orders.
- o Replace the adversarial and punitive approach with a cooperative "team" approach.
- o Restructure enforcement publicity to reduce the negative and "false message" connotations.
- o Initiate a priority and accelerated program to clean up Tech Specs.
- o NRC should increase the timeliness of their enforcement decisions.

~~o~~ Exercise centralized and disciplined control of backfits and new licensing requirements.

o Initiate an accurate reporting system which would establish the source of violation identification broken down by severity level.

~~o~~ Derive an improved data base so the quality of the agreement states programs can be better judged.