2558

2/18/87

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION '87 FEB 20 A10:34

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
COMMONWEALTH EDISON COMPANY	)	Docket Nos. 50-456 OL
	)	50-457
(Braidwood Station,	)	
	)	
Units 1 and 2)	)	

REPLY BRIEF OF APPLICANT COMMONWEALTH EDISON COMPANY

I. INTRODUCTION

A review of Intervenors' proposed findings of fact and brief reveals a wide divergence from Applicant's interpretation of the facts of record. However, even Intervenors' view of the record is palpably inadequate to warrant a denial of Edison's application for an operating license on a basis consistent with established NRC legal doctrine. As a result, Intervenors' assertion that Edison's application for an operating license should be denied is ultimately based on a legal theory which is without support in the wording of the Commission's quality assurance regulations, Appeal Board precedent or common sense.

Intervenors tell us that this is the most serious harassment case in the annals of the NRC. (Int. Brief at 44.) They attempt to persuade us of this, however, without ever offering a definition of harassment which can be applied to this evidentiary record; they instead resort to meaningless comments that this or that fact is "ironic" or "tragic." In particular,

D503

Intervenors tell us that this case is far more serious than Catawba. (Int. Br. at 55-56.) This claim is more than a little disingenuous, however, since it is based on the fact that the licensing board in Catawba rejected arguments very similar to those made here by the same counsel. Duke Power Company (Catawba Nuclear Station, Units 1 and 2), LBP-84-24, 19 NRC 1418 (1984). After reading Intervenors' brief and proposed findings, this Licensing Board should reach the same conclusion with regard to Intervenors' sweeping but unsubstantiated allegations as did the Catawba appeal board: "These are indeed serious claims. But that is all they are -- claims." Duke Power Company (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 65 (1985).

Intervenors' various claims are founded on their interpretation of Criterion I of 10 C.F.R. Part 50, and in particular, that part of the Criterion that counsels sufficient organizational independence between quality assurance departments and those that have cost and schedule responsibility. Intervenors offer several alternative theories of how the facts in this record violate Criterion I. They argue that Comstock's QC Department reported to an Edison manager having cost and schedule responsibility, a per se violation of Criterion I. (Int. Br. at 49-50.) Alternatively, Intervenors urge that this manager, Dan Shamblin, and Comstock's onsite QC Management conducted a campaign of harassment and discrimination against Comstock's QC inspectors to increase production at the expense of quality, all in contravention of the independence requirement of Criterion I. (Int. Br. at 11, 44.) Intervenors argue further, in the alternative, that even if no harassment and discrimination

occurred, Criterion I was violated because the Comstock QC inspectors believed, regardless of the facts, that an atmosphere of harassment and discrimination had been created by Comstock's QC management for the purpose of compromising quality and fostering production objectives. (Int. Br. at 3-4.)[1/] Intervenors further assert that such an atmosphere of harassment leads to a "presumption" that the quality of Comstock's inspection activities has been adversely affected. That presumption, we are told, cannot be overcome by anything short of a massive reinspection program.

It appears early in their brief that Intervenors rely principally on the theory that the inspectors' perceptions of harassment and discrimination, whether ill-founded or not, are enough to establish a Criterion I violation, thereby leading to the presumption that the efficacy of Comstock's QC inspection work has been fatally compromised. (Int. Br. at 3-5, 9-14.) Later, however, Intervenors seem to shift emphasis and reliance to the alleged per se violation of Criterion I stemming from the Shamblin involvement with Comstock's QC department and, still later, we are directed to the acts of harassment and discrimination allegedly perpetrated against the inspectors by

---

1/ Intervenors embellish on this theme by seizing on a sentence from Applicant's Proposed Partial Initial Decision as evidence of Edison's awareness, at some indeterminate time, of a "widespread perception of harassment and pressure to sacrifice quality." (Int. Br. at 4 and passim.) The statement, of course, was merely a suggestion by Edison's counsel that the record in this case reflects such an unfounded but prevalent perception among the inspectors who testified. (App. Prop. PID at 49.)

Comstock's QC management as demonstrating a violation of Criterion I. (Int. Br. at 43-44, 48-53.) We are not told which, if any, of these theories Intervenors favor. They have fashioned no logical thread among them on brief and none is discernible.

II. ARGUMENT

A. The Record Establishes that the Comstock QC Department Did Not Report to Shamblin.

Intervenors eschew any suggestion that Comstock's QC Department lacks the requisite independence from Comstock's Production Department. (Int. Br. at 50.) They accept without objection Applicant's view that the organizational separation existing between the two departments affords sufficient independence of cost and schedule considerations, as required by Criterion I of Appendix B to 10 C.F.R. Part 50. (Applicant's Proposed Partial Initial Decision ("PPID") at 14-15). Nevertheless, Intervenors dismiss Comstock's inter-company organization as sham; and instead, they argue that DeWald and the other Comstock QC managers reported to Braidwood's Project Construction Superintendent, Dan Shamblin, thereby violating the organizational independence requirement of Criterion I since it is undisputed that Shamblin had responsibility for Braidwood cost and schedule matters.

Nothing in this record supports Intervenors' notion that DeWald "reported" to Shamblin in the context of Criterion I. They cite to no organization chart or other document in this docket that shows such a relationship. Rather, Intervenors infer this relationship from the fact that Shamblin was assigned as

Applicant's representative to administer the Braidwood onsite construction contracts, including Comstock's. (Applicant's Proposed Finding ("App. F.")5.) This inference is mistaken. Shamblin was merely manifesting the leadership that NRC's Region III found to be lacking in Applicant's previous managers. Specifically, NRC criticized Applicant for a lack of sufficient management involvement in, among other things, the quality programs of the Braidwood onsite contractors, including Comstock. (Int. Ex. 88, NRC Brief at 18 NRC FF-23-24.)

When Shamblin became Project Construction Superintendent in May 1984, he recognized immediately that management assistance was needed for Comstock's QC Department. (Shamblin, Prep. Test. at 8 ff. Tr. 16274.) Shamblin observed that Comstock's QC Department was not able to keep current with the inspection workload; the Department was falling behind and a larger backlog was being created. (Id. at 7-9.) Shamblin met with DeWald, they reviewed the situation, and Shamblin agreed that certain corrective action activities could be placed on hold until the QC Department could keep current with newly installed work and eliminate its inspection backlog. (App. F-18.)

Shamblin also provided direct assistance. He authorized the loan of four Sargent & Lundy QC inspectors to Comstock. Exercising his authority as Construction Superintendent, he directed Comstock's Production Department to focus its attention on non-safety related work, thereby reducing the flow of new inspection work to the QC Department since only safety-related work was subject to QC inspection. (Shamblin, Prep. Test. at 9, 13 ff. Tr. 16274.) Shamblin also redirected

craft activity to work on correcting deficiencies under open NCRs and ICRs (Id. at 13.) Shamblin instructed Comstock's Production and Engineering Departments to assure that work was completely installed and installed to the latest drawings. He had discovered that numerous discrepancies had been noted by QC inspectors for incomplete work or work performed against dated drawings. Shamblin also recognized that the high volume of ICRs and NCRs would be reduced substantially if craft personnel performed the work right the first time. Consequently, Shamblin directed the manager of Comstock's Production Department to increase the quality awareness of the crafts. (Id. at 12-13, Attch. 2.)

Shamblin's actions were not those of a supervisor. He did not "direct" DeWald in an organizational sense. That was the responsibility of Comstock's offsite QA management. Rather, he took the time to understand DeWald's problems. When Shamblin understood that the workload exceeded the manpower resources available to DeWald, he exercised his authority as Construction Superintendent to help ease the workload and the pressure on the QC Department. There was nothing sinister here; no corruption of Criterion I. This was only the strong management role expected of Applicant by the NRC.

Intervenors broadly claim that Shamblin improperly pressured DeWald and his fellow managers, causing them to harass and discriminate against the QC Inspectors. (Int. Br. at 43-44.) However, Intervenors can cite to only one event to support their accusation. They trumpet the fact Shamblin told DeWald that positive results in reducing the backlog were needed "very

shortly." (Int. Br. at 3, 11.) Such action was of course necessary. It would have been contrary to good quality practice to have allowed the backlog to continue to mount -- a fact of which Intervenors no doubt would have reminded the Board had it been allowed to happen. (App. F-17.)

B. No Violation Of Criterion I Occurred As A Matter Of Law, Even Assuming That Comstock's QC Department Reported To Shamblin.

NRC's organizational independence requirement found in Criterion I has evolved over the years. As originally formulated, Criterion I stated in pertinent part that:

> In general, assurance of quality requires management measures which provide that the individual or group assigned the responsibility for checking, auditing, inspecting or otherwise verifying that an activity has been correctly performed is independent of the individual or group directly responsible for performing the specific activity.

35 Fed. Reg. 10499 (1970). This provision was interpreted by the Atomic Safety and Licensing Appeal Board in 1973 to exclude from the supervisory organization of a quality control department any supervisor who had concomitant responsibility for performing the work being inspected. Consumers Power Co. (Midland Plant, Units 1 and 2), ALAB-147, 6 AEC 636, 639-40 (1973), reconsideration denied, ALAB-152, 6 AEC 816 (1973); Commonwealth Edison Co. (LaSalle County Nuclear Station, Units 1 and 2), ALAB-153, 6 AEC 821, 821-22 (1973). The appeal board held: "As we read Appendix B, it is not enough that the auditing engineers be 'independent of the individual or group directly responsible for performing

the specific activity.' Rather, that requirement applies as well to the engineers doing the initial 'checking' and 'inspecting' -- here, the quality control engineers." Consumers Power Co. (Midland Plant, Units 1 and 2), ALAB-147, 6 AEC at 640 (emphasis in original).

The Commission, then the U.S. Atomic Energy Commission, approved this principle in affirming the LaSalle decision. Commonwealth Edison Co. (LaSalle County Nuclear Station, Units 1 and 2), CLI-73-32, 6 AEC 1072 (1973). However, it questioned the wisdom of the rule of law it had affirmed and appropriately initiated a rulemaking to seek comments from the public about the effect of that rule on licensees. Id. at 1072. The Commission described the perceived concern in its rulemaking notice:

> While it is desirable from one point of view to have persons and organizations performing quality assurance functions completely separated, organizationally, from individuals who have significant responsibility for performance of the work (including but not limited to cost and schedule responsibility), that same separation may in some instances hinder the quality assurance persons and organizations in performing their functions.

39 Fed. Reg. 13974 (1974). The rulemaking sought to balance the competing interests and to better establish the line between permissible and impermissible organizational relationships.

Thus, the Commission proposed to revise Criterion I by substituting the following sentence in lieu of that quoted supra, p. 7:

> The persons and organizations assigned the responsibility for checking, auditing,

> inspecting, or otherwise verifying that an activity has been correctly performed shall report to a management level such that this required authority and organizational freedom, including sufficient independence from the pressures of production, are provided.

39 Fed. Reg. 13975 (1974) (emphasis supplied.). The concept of "sufficiency" was introduced for the first time. No longer, if the rule were adopted, would an organizational relationship such as the ones criticized in Midland and LaSalle and the one Intervenors say existed between Shamblin and Comstock's QC Department be a per se violation. Instead, it would be necessary to evaluate the circumstances of each case and determine as a matter of judgment the sufficiency of the independence between the two organizations.

The final rule was issued on January 20, 1975. 40 Fed. Reg. 3210C (1975). The flexibility for determining permissible organizational relationships was maintained. The final language read as it reads today, in pertinent part, that:

> persons and organizations performing quality assurance functions shall report to a management level such that [the] required authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations, are provided.

40 Fed. Reg. 3210D (1975). In addition, it was made clear that quality assurance programs involved "both the performers who achieve the quality objectives [e.g., Shamblin] and the verifiers [e.g., Comstock's QC Department] who assure that the required quality objectives have been obtained." Id. at 3210C.

The appeal board had occasion to revisit the interpretation of Criterion I after the rule change in 1975. Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102 (1984). In Shoreham, the Applicant's operational quality assurance organization was separated into an onsite Operational Quality Assurance Section and an offsite Quality Assurance Department. The onsite Operational Quality Assurance Section reported to the Plant Manager, who had responsibility for, among other things, cost and schedule matters. The offsite Manager of the Quality Assurance Department had no supervisory authority over the onsite QA activity; however, the QA Manager was responsible for auditing the performance of the onsite Operational QA activity. 20 NRC at 1150.

It was argued that the above-described organizational relationships between the Plant Manager and the onsite Operational QA group was impermissible under Criterion I because insufficient independence existed between the two organizations. This view appeared to be clearly supported by the appeal board's Midland and LaSalle decisions. However, the appeal board, with Chairman Rosenthal again presiding, rejected this viewpoint. The Board first noted that with the 1975 rule change the Commission had indicated the rigid and dogmatic separation of QA personnel from individuals having significant responsibility for work performance was no longer needed. The appeal board, after observing that the proposed organizational structure met NRC Staff and industry guidance, deemed most significant the fact that the audit of the onsite QA organization by the offsite QA

manager provided confidence that sufficient independence would exist and be maintained. 20 NRC at 1150-51. Thus, the appeal board found the Shoreham organization a permissible one under Criterion I.

Likewise in this case, if it were decided that Comstock's QC Department "reported" to Shamblin, a position that is not supported by the record, the Licensing Board should find, consistent with the teachings of Shoreham, that sufficient independence between the two exists. The Board can reasonably infer that the NRC Staff and industry guidelines that would sanction the Shoreham organizational relationship would likewise embrace the hypothetical Shamblin/DeWald situation. Importantly, as in the Shoreham case, the Comstock QC Department was audited by Comstock's onsite QA Department (Intervenors do not assert that this Department reported to Shamblin) and Comstock's offsite Corporate QA Department. (App. FF-4, 23.) In addition, Comstock's QC Department was audited by Applicant's onsite and Corporate QA Departments as well as being subject to third party overinspections by Pittsburgh Testing Laboratory. (App. F-4, 939-940.) These varied audit activities provide substantial assurance that sufficient independence was maintained to enable Comstock's QC inspectors to conduct their inspections correctly.

C. The Asserted Acts of Harassment And Discrimination of Comstock's QC Inspectors By Their Management Do Not Establish A Violation of Criterion I.

1. Alleged Specific Acts of Harassment.

After filing a contention alleging widespread harassment of Comstock QC inspectors, Intervenors steadfastly

refuse on brief to define what constitutes actionable harassment. Moreover, where the record establishes that some harassment did in fact occur, notably in Saklak's threat to Snyder, Intervenors pass over it with hardly a word. Indeed the section of their brief entitled "Numerous Comstock QC Inspectors Were Subjected to Harassment and Production Demands" occupies two paragraphs in a brief of 94 pages. (Int. Br. at 15-16). Intervenors merely list incidents without enlightening us as to why they constituted harassment. They ignore completely the definition of QC inspector harassment established in the Catawba case. (App. PPID at 20-21.) At first sight this is puzzling. It soon becomes apparent, however, that this is part of a deliberate strategy. Intervenors do not want the Licensing Board to decide what constitutes harassment or to determine whether "specific instances of misfeasance" have occurred.[2/] They recognize that this course would lead to a finding that instances of misfeasance have been few and isolated. And indeed, an analysis of their arguments shows this is the case.

Applicant agrees that inspectors Mustered and Snyder were harassed by Saklak, although his acts did not reflect a disregard for quality on his part. (App. PPID at 29-30.) In addition, Intervenors assert without elaboration that QC

2/ The Catawba licensing board noted that the thrust of the harassment contention before it was "primarily toward alleging company attitudes and practices; proof of this contention . . . involv[es] specific instances of misfeasance. . . ." Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), LBP-84-24, 19 NRC 1418, 1433 (1984).

Inspectors Peterson, Holley, Bowman, Rolan, Stout, Bossong and Perryman, Martin and Archambeault were also harassed by Comstock's QC management. (Int. Br. at 15-16.) In no case do Intervenors attempt to show that the incidents constituted harassment as defined by the licensing board in Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), LBP-84-24, 19 NRC 1418, 1520-21 (1984). The Licensing Board in Catawba reasoned that an essential element of harassment is the intent to impede the proper performance of the inspector's task. Id. at 1520. We review the record on these inspectors seriatim.

Peterson. A comparison of Intervenors' Finding ("Int. F") 503 with Applicant's Findings 155-159 indicates one clear area of agreement, namely that Peterson and his two immediate supervisors disagreed about whether the painted condition of the welds encountered by Peterson during his inspections served as a reasonable excuse for his low inspection productivity. Intervenors assert that as a result, Comstock inappropriately transferred Peterson from the inspection assignment. (Int. Br. at 15; Int. F-503 at 107.) The evidence supports a contrary conclusion. Intervenors, in supporting Peterson's side of the story, ignore the fact that Peterson conceded that he had taken longer than other inspectors had taken to clean welds of paint. (App. F-158.) Intervenors also ignore the fact that Peterson requested a transfer to a different assignment. He was offered a transfer to the "in-process" inspection area. Peterson readily accepted the offer. (App. FF-157, 159.) This resolution of the disagreement between Peterson and his two immediate supervisors was an exceedingly reasonable management action. No one attempted to

compromise the integrity of Peterson's inspections, and his transfer was in accord with his own wishes.

Holley. In Finding 504, Intervenors complain that DeWald spoke to Holley about his inspection productivity; DeWald "counseled" that he could do more. Other supervisors advised Holley similarly. We are not told how these discussions constitute harassment. Holley did not feel harassed by his conversation with DeWald. None of the conversations either caused Holley to change his inspection practices or to believe he ought to overlook construction defects in order to increase productivity. (App. FF-160, 162.) Holley's treatment was in no way intended to impede his inspection performance.

Bowman. Intervenors' Finding 505 states that the conduct of Bowman's supervisors, Walters and Landers, in the base metal reduction problem discussed in this finding and Applicant's Findings 111-113, evinces "an unsupportive attitude toward an inspector's performance of his quality assurance function." Moreover, Intervenors claim that Bowman was the recipient of an "implied" threat that he "might" be deprived of overtime, and they conclude that this implied threat exemplifies the subordination of QA functions to the goal of meeting production requirements. Such innuendo is not harassment within the meaning of Catawba. Supervisor Landers made the "implied threat." Bowman did not know whether Landers intended the statement as a joke. Landers' true intent was never established on the record. It is known that later that day Bowman was directed to take appropriate action including writing an NCR, which he proceeded to do. (App. FF-111-113.)

Rolan. There is no disagreement that Saklak's behavior toward Rolan was unjustified. (Int. F-506; App. PPID at 24; App. FF-42-46.) The disagreement centers around the significance to be attached to that behavior. Saklak was attempting to enforce the Comstock practice of identifying the cognizant craft worker on an NCR. (App. FF-43-44.) Rolan resisted because he thought it would unfairly hold up the worker to criticism. (App. F-43; Int. F-506.) These circumstances do not constitute harassment under Catawba -- Saklak by his conduct toward Rolan was not intending to modify Rolan's inspection processes for the purpose of impeding the proper performance of his task.

Stout. Intervenors state that Stout was reprimanded for low inspection productivity. (Int. Br. at 16, Int. F-120.) Applicant agrees. What Intervenors fail to explain is that the reprimand was warranted. (See App. FF-142-146.) Intervenors' only comment on this score is that Bossong believed the warning unfair even though he considered Stout's productivity abnormally low. (Int. F-120.) That is not Bossong's testimony. He initially testified that the Stout warning was unfair. (Tr. 9839.) On cross-examination, Bossong agreed that Stout's productivity was unusually low. (Tr. 9897.) What is not known with certainty is whether the recognition by Bossong of Stout's productivity caused him to change his opinion about unfairness. It seems likely the answer is "yes," since Bossong's opinion was based on his initial belief that Stout's lack of productivity was due to unfamiliarity with his assigned area of inspection activity. (Tr. 9839.) However, when told that at the time of the warning Stout had 1½ months of junction box inspection time under

his belt, Bossong then concluded that this was sufficient time for Stout to become re-acclimated to junction box inspections. (Tr. 9898.) Applicant's evidence has no uncertainty associated with it. Stout was absent from his job excessively and his productivity was below any reasonable norm. (App. FF-142-146.)

Bossong and Perryman. Intervenors argue that the transfer of Bossong and Perryman was punitive. (Int. Br. at 16; Int. F-508.) The matter, when placed in perspective, does not support this conclusion. (App. PPID at 66-67; App. FF-328-339.) Intervenors ignore Perryman's inexcusable threat that if he were not transferred the quality of his inspections might suffer, which was the reason for Simile's reaction to the transfer ultimately granted to Perryman. (App. F-334.) Instead, Intervenors raise the specter of a callous Simile transferring Perryman with the knowledge that the transfer would interfere with Perryman's ability to care for his dying mother. (Int. Br. at 39.) Perryman attended his mother all day on Sunday, which was apparently the only day of the week when he "house-sat" for her. (Perryman, Tr. 9692, 9770.) Perryman's transfer did not interfere with this undertaking; nor did Perryman explain how his care for his mother might have been affected by a transfer to second shift. He did state, however, that it would not stop him. (Perryman, Tr. 9692.) In addition, there is no evidence that Simile knew that the transfer would change in any way Perryman's care for his mother. (Perryman, Tr. 9724-25, 9768-73.) When the issue of Bossong's and Perryman's transfer is stripped of emotion, it is plain that the matter did not involve any attempt to influence adversely their inspection duties.

Martin/Archambeault. Although referred to as acts of harassment, Intervenors address Messrs. Martin's and Archambeault's complaints as issues of discrimination. Applicant does so as well, and our reply to Intervenors' arguments are set forth infra in that section of this Reply Brief.

2. Implied Acts of Harassment -- The "Poisoned Atmosphere."

It is in the section of their brief at pages 9-15 and the corresponding proposed findings (Int. FF 117-129.) that Intervenors most exercise their ingenuity to depict the "poisoned atmosphere" they believe existed at Comstock.[3/] To this end they have synthesized various snippets of the record into a characterization of relations between QC inspectors and Comstock QC management in which only discord and abrasiveness are the themes. It does not matter to Intervenors whether or not a given incident constitutes wrongdoing on the part of management. Indeed, Intervenors make no effort to match these incidents against any legal definition of harassment; what matters is simply "atmosphere." Thus all is grist to Intervenors' mill. It

---

3/ Most of Intervenors' Finding 124 and their Finding 501 must be disregarded. In paragraphs two through six of Finding 124 and in Finding 501 Intervenors rely on Int. Ex. 42 for the truth of the matters asserted therein. This exhibit was admitted for the limited purpose of identifying the QC inspectors that visited the NRC on March 29, 1985, and for determining what the NRC understood the inspectors' concerns to be. (Tr. 4603-04.) Intervenors' use of the statements contained in the exhibit exceeds this permissible use, and those portions of Intervenors' Finding 124 and their Finding 501 should be stricken.

is just as probative that DeWald often did not say good morning as that Saklak threatened Snyder. Both are simply examples of a "poisoned atmosphere." (Int. Br. at 9, 12-13.) As has been shown supra, Intervenors have precious little to say about harassment in the sense of specific instances of misfeasance calculated to compromise the adequacy of inspections. They have much to say, however, about Comstock management's "emphasis on quantity over quality" and an atmosphere of "production pressure." Here they need demonstrate no wrongful acts; virtually any action or non-action by management can be cast in this mold.

In fairness to Intervenors, they did not invent these phrases; many inspectors used them. What the record establishes, however, is that the basis for such statements by inspectors was usually rumor and shop talk or intuition. Moreover, some inspectors used the phrases as a sauce for all dishes. To Inspector Gorman "production pressure" meant being asked to perform one task when he preferred to perform another. (App. PPID at 35.) To Inspector Archambeault, who, as Intervenors point out, was characterized by a fellow inspector as "one of the laziest persons I've ever seen in my life," (Int. F-711.), "emphasis on quantity over quality" meant something similar. It meant, among other things, being asked to perform an inspection on a priority cable pull when he would have preferred to perform a different task, which did not have priority and which did not suffer from being put off to the next day. (App. FF-384-85.) Intervenors repeat Archambeault's allegation seriously. (Int. Br. at 37.) Whatever can be said about all of this mass of opinion, it cannot

be said it is either probative or supportive of a reasonable conclusion that Comstock's QC management in fact indulged in "production pressure" and emphasized "quantity over quality." (App. PPID at 36-51.) It is because of this, perhaps, that Intervenors are reduced to arguing that it doesn't matter whether the inspectors' perceptions of management wrongdoing were correct.

Intervenors' argument begins with a character assassination of QC manager Irving DeWald. (Int. Br. at 13-14; Int. F-129.) It does not advance their cause. Mr. DeWald is charged with being cold and taciturn. (Int. Br. at 13; Int. F-129.) One of the most telling points against him is apparently that he didn't always say hello in the morning. (Id.) We are told, at length, that the method of documenting weld inspections in use when Mr. DeWald was an inspector in 1980-81 was improper. (Int. Br. at 14; Int. FF-132-133.) We are told that Mr. DeWald was a poor role-model because inspectors erroneously believed that during that period he had inspected 1,000 welds in a day. (Int. Br. at 13-14; Int. F-132.) Somewhat inconsistently, we are also told that this bit of folklore about Mr. DeWald was regarded by the inspectors with "ridicule and disbelief." (Int. Br. at 14.) We are told that Mr. DeWald "actually flunked" a mock practical weld examination.[4/] (Int. Br. at 14; Int. F-131.) The

---

4/ Apparently the crowning ignominy in Mr. DeWald's career at Braidwood, in Intervenors' view, is that he successfully eliminated the quality problems posed by the backlog of inspections facing Comstock when he took over. Intervenors' (Footnote Continued)

one thing Intervenors do not tell us, however, because they cannot, is that there was a single instance in which Mr. DeWald harassed or intimidated any of his inspectors or improperly pressured any of them to accept faulty work. The most that the case against DeWald amounts to is that he gave a number of pep talks to the inspectors in 1984 where he told them that there was a big job ahead and urged them to pull together as a team to get it done; and that he employed a status tracking system to monitor the allocation of inspector resources and manage the effort to eliminate the backlog. (Int. Br. at 11.) We address the weekly meetings and the tracking system in turn.

Intervenors observed, as Applicants did in their findings of fact, that DeWald instituted weekly Friday meetings with all QC Supervision and inspectors in attendance. At these meetings, Comstock's QC management reported on the status of the inspection work, and identified those areas of inspection that were behind and needed more manpower allocated to them. (Int. F-117; App. FF-117-121.) Intervenors then cite to the testimony of inspectors Seeders, Gorman, Wicks, Martin and Bowman to support their charge that DeWald and his managers used these

---

(Footnote Continued)
chief exhibit against Mr. DeWald is a letter from Mr. Shamblin congratulating him and his staff on this success: "It is through the dedication and hard work of yourself, your management and supervisory personnel and individual quality control inspectors that Braidwood Station will be completed and receive a license." (Int. Br. at 14-15.) Presumably Mr. DeWald could only have discharged his responsibilities to Intervenors' satisfaction if he had not resolved the prior existing quality problems and thereby prevented Braidwood from being completed.

meetings to apply "production pressure" on the QC inspector workforce and emphasize "quantity over quality." (Int. Br. at 11; Int. F-117.) None of that testimony establishes such conduct.

Seeders testified that he heard DeWald talk about schedule pressure or deadlines. In a follow-up question, Seeders testified that everyone understood the deadlines to be emanating from Applicant. (Tr. 7567.) Schedule pressure and deadlines are apparently synonymous terms to Intervenors. (Int. F-117.) A deadline, however, has neutral connotations; it may be reasonable or unreasonable, depending on the circumstances. Mr. Seeders was not asked to explain whether the deadlines he heard of at DeWald's weekly meetings were reasonable or not. Schedule pressure, on the other hand, suggests something improper; however, Seeders again provided no amplification. Indeed, because of the leading nature of counsel's question, the record cannot be fairly read that Seeders ever heard the phrase "schedule pressure" at the weekly meetings. (Tr. 7567.) Finally, Seeders' understanding that DeWald was emphasizing "quantity over quality" was based not on first hand knowledge but rather on overhearing other inspectors using the code word, "DeWald wants numbers again." (Tr. 7565-67.)

Although Gorman had agreed that it was proper for Comstock QC management to ensure that inspectors were not loafing (Tr. 5779), he objected to DeWald's authoritarian management style and his failure to single out the loafers among the inspectors for individual criticism rather than lecturing the group at large during the weekly meetings. (Tr. 5797-5801.)

Although Gorman initially stated that DeWald's statements at those meetings led him to the interpretation that DeWald was emphasizing "quantity over quality," further questioning made it clear that Gorman's opinion was actually based on his objections to DeWald's management style (Id.) -- hardly a rational basis for such an interpretation.

Intervenors offer inspector Wicks' testimony for the proposition that he believed quantity was emphasized over quality because Comstock management was trying to meet "Edison-imposed deadlines." (Int. F-117.) In fact, when he testified, Inspector Wicks could not recall making such a statement to the NRC resident inspectors. He testified he "probably did" make such a statement but his recollection was based on an intuitive feeling. (Tr. 7076-77.) The basis for such a statement, if it was made at all, was a vague reference to quotas to get jobs done to meet Applicant's schedule. (Tr. 7077.) Wicks, however, was unable to explain how quality was either compromised or subordinated. (Tr. 7078.) A belief based on intuition[5/] that cannot be supported by intelligible explanation is hardly probative.

Intervenors cite the testimony of Inspectors Martin and Bowman for remembering that DeWald talked about a minimum number of inspections to be performed to eliminate the inspection

---

5/ Other examples of intuitive testimony are those of inspectors Gorman and Snyder. Gorman's feeling that Applicant was pressuring DeWald to accomplish more work was instinctive. (Tr. 5870-71.) In similar fashion, Snyder surmised that Applicant was pressuring DeWald to eliminate the backlog because Applicant owned the plant. (Tr. 4241.)

backlog. (Int. F-117.) Intervenors imply that this was improper conduct showing quantity being emphasized over quality. Inspector Martin, however, merely testified that DeWald discussed "goal quotas;" he did not characterize them as "a minimum required number of inspections to be performed," as urged by Intervenors in their Finding 117. (Tr. 9240-41.) Similarly, Bowman did not intend his testimony to be construed as Intervenors have done. He recalled an inspection "norm" being discussed during DeWald's weekly meetings but he did not recall DeWald "saying hard and fast that 'We've got to do these many inspections a day,' or anything along those lines." (Tr. 6866.)

DeWald is also criticized for allegedly exhorting the QC inspectors to meet Applicant's production demands so that Comstock would not lose its contract and they would not lose their jobs. (Int. Br. at 11.) Of the six inspectors who testified on the subject, however, three were reciting shoptalk and their views should be discounted accordingly. (Applicants F-132.) Of the remaining three inspectors, one recounted a meeting with Seltmann and Worthington (Holley, Tr. 5151-52), another recounted a meeting with Seese (Peterson, Tr. 5950-51) and one, Mr. Hunter, said that DeWald mentioned the matter at several weekly meetings. (App. F-133.) Holley stated that Seltmann merely asked the inspectors for a concerted effort to do their best. (Tr. 5151.) Peterson characterized Seese's "exhortation" as "everybody's efforts would be appreciated." (Tr. 5951.) Only Mr. Hunter, the inspector who was fired for falsifying quality documents, testified with certainty that

DeWald was pressuring inspectors at the weekly meetings about the possible loss of the Comstock contract.

Except for the uncorroborated and unreliable testimony of Mr. Hunter, none of the inspectors testified that DeWald or his managers had attempted to extract unreasonable amounts of work because of any notion that Comstock might lose the contract. What the record does show is that Comstock's contract status was discussed at various times but in a random and benign manner. In fact, Comstock was not in jeopardy of losing the contract. (App. FF-134-135.) The electrical work later awarded to Gust K. Newberg Co. was merely a portion of the work on Unit 2. This contract with Newberg did not result in any diminution of the scope of work for the QC inspectors, and it was given to Newberg because Comstock was fully occupied with its construction work on Units 1 and 2 and its time-consuming involvement in the licensing hearings. (Shamblin Reb. Prep. Test. at 30-31 ff. Tr. 16274.)

The touchstone of Intervenors' "emphasis on quantity over quality" argument is the alleged use of quotas by Comstock management. It is precisely at this point that nebulous claims that management was urging inspectors to do more work would translate into an act that could be characterized as harassment. If actual quotas of inspections were set and inflexibly enforced, management would run a grave risk of compromising quality because the time it takes to perform a given inspection thoroughly may vary widely. Intervenors, however, expressly concede that Comstock management did not impose quotas, but properly recognized "that variations of difficulty would affect inspector work from day to day." (Int. F-123.) Intervenors fall back on the

position that management "communicated and enforced real expected levels of inspector productivity." (Id.) Assuming the truth of this, we are not told what is wrong with it. Intervenors' expert, Dr. McKirnan, testified that the communication of such expectations by management would not constitute harassment. (App. F-810.) Of course management expects employees to work for their paycheck and is not required to tolerate gold bricking because an employee serves in a quality function. What Intervenors do not tell us, and what the record would not support, is that inspectors were forced or even expected to perform an unreasonable number of inspections, thereby creating a potential that defects might be overlooked. There is simply no evidence that Comstock inspectors were not allowed sufficient time to identify and document discrepancies adequately.

The record shows that it is not possible to come up with a precise figure for a "reasonable" number of inspections for a given day or even a given week, because the time it takes to perform an inspection thoroughly is affected by the accessibility of the component to be inspected and the amount of research the inspector must do. (Bowman, Tr. 6863-6865.) Nonetheless, such broad indications as the record contains shows that on average inspectors were not performing numbers of inspections they considered unreasonable. NRC Inspector Neisler investigated this question. He interviewed the Comstock inspectors who had visited the NRC on March 29, 1985 and raised their hands to indicate their belief that Comstock was "emphasizing quantity over quality." (Neisler at Tr. 10788-89.) When Mr. Neisler asked these inspectors what was a reasonable

number of inspections that they could normally perform in a day, they gave answers ranging from 10 up to 30. (Tr. 10789.) Mr. Neisler's own opinion, based on his observation of QC inspectors over the years, was that one inspection an hour was a reasonable average. (Tr. 10790.) Mr. Neisler then examined Comstock records for the month preceding the March 29, 1985 visit to the NRC. He determined that on average Comstock inspectors had performed 21 inspections per week (3 a day for a 7-day week, about 4 a day for a 5-day week). (Tr. 10785-86.) Mr. Neisler concluded that on average Comstock inspectors were not performing an excessive number of inspections. (Tr. 10785.) Indeed, he believed that on average the inspectors were performing less than a reasonable amount of inspections. (Tr. 10790.)

Thus there is no evidence that the average level of productivity of Comstock inspectors was in fact excessive. But Intervenors tell us that average levels of inspector productivity were monitored on an individual basis and that low average productivity was punished. (Int. F-123).[6/] What is the evidence for this? The chief evidence is that Inspector Stout was given a reprimand for performing only 1.6 inspections a day on average over a 7-week period, as well as for a poor work attendance record. It cannot seriously be argued that this reprimand for what Inspector Bossong agreed was "unusually low" productivity was unjustified. (App. F-144.) Two other inspectors,

---

6/ Intervenors apparently use the verb "sanction" in the novel sense of "punish", instead of in the conventional sense of "authorize." (Int. Br. at 12; Int. F-123.)

Danny Holley and Dean Peterson, were spoken to about low productivity. These two matters are discussed supra at 12-13. No punishment was meted out to either inspector.

The final peg in Intervenors' case for "emphasis on quantity over quality" is the assertion that management imposed no sanctions on inspectors for inadequate performance of QC inspections. (Int. Br. at 12; Int. F-126). Intervenors contrive to make this assertion only by ignoring the contrary facts in the record. Intervenors cite Rick Martin as the outstanding example of this lack of punishment for "poor quality inspection performance." (Int. F-126.) (Later, when they want to make use of Martin for another purpose, Intervenors tell us that he was a "good inspector who identified many problems and went by the book", and was retaliated against because he "did his job too well, and expressed concerns.") (Int. Br. at 39-40.) The facts are that Martin was twice decertified for poor inspection practices. He was put in the position of reviewing documents and was closely supervised in the performance of that task by Assistant QC Manager Seese. (Martin. Tr. 9173-74, 9342-43, 9518-24.) Indeed Martin regarded this close supervision as harassment. (Martin, Tr. 9518-22.) Intervenors at least have the grace not to endorse that claim.

Martin was not the only inspector removed from inspection tasks for inadequate performance. John Seeders was transferred to a position in the engineering department because of his persistent inability or unwillingness to follow calibrations procedures, in particular the procedural requirement that he issue ICRs for out-of-calibration tools. (App. FF-240-250.)

Intervenors claim that Seeders' transfer was discriminatory. If he had not been transferred, however, they would surely be using him as the prime example of Comstock's disregard for the quality of inspections and tolerance of shoddy work. Finally, Inspectors Hunter and Arndt were fired for falsely documenting that painted welds were acceptably clean. (App. FF-342-346, 357.) Intervenors have not only abandoned their allegation that this firing was discriminatory, they have gone further and forgotten that the incident happened at all.

Given this evidentiary record, Intervenors' claim that Comstock QC inspectors were improperly subjected to pervasive "production pressure" and that their management "emphasized quantity over quality" simply will not withstand scrutiny. And it is these claims that are ballyhooed on nearly every page of Intervenors' brief and that serve as the chief basis for their allegation that a "massive" breakdown of the Comstock QA program occurred.

3. Alleged Acts of Discrimination.

After briefly rehearsing their harassment allegations, Intervenors give a lengthy and detailed account of their discrimination claims, where they clearly feel they are on firmer ground. It thus becomes apparent that their case is ending up the way it started out in early 1985: it is essentially a case about John Seeders and Worley Puckett. Everything else is window-dressing.

Intervenors tell us that Comstock's alleged acts of discrimination alone -- those involving Seeders and Puckett, and later incidents involving Archambeault and Martin -- would

warrant denial of Edison's license application. (Int. Br. at 17.) Although denial of a license application is one of the possible sanctions for violation of the Commission's discrimination regulation, 10 C.F.R. § 50.7, it is difficult to believe that Intervenors make this argument seriously. There is no reason to distinguish discrimination from harassment and intimidation for purposes of a Callaway analysis. Thus denial of an operating license for Braidwood on grounds of discrimination would not be reasonable unless the Board could find that Applicant had engaged in a pattern of discrimination sufficiently widespread to indicate a pervasive breakdown of the QA program. See, e.g., Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 327-329 (1985); Duke Power Co., (Catawba Nuclear Station, Units 1 and 2), LBP-84-24, 19 NRC 1418, 1518 n. 27 (1984).

Intervenors also argue that in a Section 50.7 discrimination case, the Board must apply an evidentiary presumption known as the "dual motive" doctrine. (Int. Br. at 26.) Under that rule, when an employee shows that an illegal motive played some part in the action taken against him, the employer must prove that it would have taken the action even if the employee had not engaged in protected conduct. Mackowiak v. University Nuclear Systems, 735 F.2d 1159 (9th Cir. 1984). Intervenors are wrong that this evidentiary presumption applies under Section 50.7. It has been applied under Section 201 of the Energy Reorganization Act, 42 USC § 5851, the "whistleblower" statute, only as enforced by the Secretary of Labor. The different purpose underlying NRC enforcement of the whistleblower

statute under 10 C.F.R. § 50.7 makes it inappropriate to extend the presumption to NRC cases under that regulation.

Two distinct purposes underlie the "whistleblower" statute, and they are reflected in the complementary enforcement jurisdiction given to the Secretary of Labor and the NRC. The legislative history of the provision indicates that it was intended to afford protection to employees and safeguard their rights and also to help assure that employers do not violate the requirements of the Atomic Energy Act. 1978 U.S. Code Cong. and Adm. News 7304 (P.L. 95-601); Cong. Record S29771 (Sept. 18, 1978). The Secretary of Labor has jurisdiction to enforce the employee protection purpose of the statute by ordering that the employee be reinstated with back pay and by awarding compensatory damages. 42 USC § 5851. On the other hand, the NRC has independent jurisdiction under the Atomic Energy Act, reflected in Section 50.7, to enforce the public health and safety purpose of the statute by denying, suspending or revoking a license or imposing a civil penalty. This complementary jurisdiction has been formally recognized by the two agencies in a Memorandum of Understanding. 47 Fed. Reg. 54585 (Dec. 3, 1982). The differing purposes to be served by each agency in its enforcement of the statute have been clearly recognized by the Appeal Board in Union Electric Co. (Callaway Plant, Units 1 and 2), ALAB-527, 9 NRC 126, 132-39 (1979).

The dual motive test has been employed by the Secretary of Labor in cases under Section 201, and its use in that context has been approved by the federal courts. Mackowiak v. University Nuclear Systems, supra; Consolidated Edison Co. v. Donovan, 673

F.2d 61 (2d Cir. 1982). The courts have not held, however, that the Secretary is required to use this test. Mackowiak, supra, 735 F.2d at 1164. It is appropriate for the Secretary to apply an evidentiary presumption that works in favor of the complaining employee because his authority is designed to effectuate the statute's employee protection goal by providing employee remedies. It is otherwise with the NRC, which has no authority to provide a remedy to the employee. Section 50.7 simply forms part of an objective regulatory scheme setting forth conditions under which licenses will be granted and continued in effect; it provides a range of penalties for violations of a licensee obligation. Thus, in enforcing Section 50.7, there is no reason to apply an evidentiary presumption in favor of an employee to whom the NRC cannot provide a remedy.

On the contrary, in defending against a Section 50.7 charge in a licensing proceeding, the applicant or licensee is entitled to the same rule of evidence that applies in NRC proceedings generally: the applicant bears the burden of proof by a preponderance of the evidence on all issues admitted for litigation. And in fact this is what the Commission has done. In Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 327 (1985), it was undisputed that individuals at TMI had lost their jobs after raising safety concerns. The Commission held that the issue was simply whether the evidence showed a nexus between the protected activity and the firing. The Commission concluded with respect to one individual: ". . . while the timing of the suspension may have given the appearance that it was retaliatory, the evidence does

not support such a conclusion." 21 NRC at 328. Thus, when a Section 50.7 claim is admitted in a licensing proceeding, the only issue is whether the totality of the evidence shows that the adverse job action was taken in retaliation for engaging in protected activity.

(a) Puckett.

Intervenors' position is that Comstock fired Puckett in retaliation for revealing, in a memorandum of August 22, 1984, that Comstock's welding QC program was on the verge of a total breakdown. Comstock fired "the messenger who brought the bad news." (Int. Br. at 17-18.) Nonetheless, Intervenors effectively concede the validity of the alternative reasons for Puckett's termination offered by Applicant. Intervenors confirm that Puckett identified many alleged problems, but they are unable to point to any solutions that he provided. (Int. FF-209-213, 216.) They also agree that evaluating and correcting problems, rather than merely identifying them, is what he was hired for. (Int. F-221.) They thus concede that Puckett never functioned effectively in his role as welding Level III. They also appear to agree that Puckett's replacement, Tony Simile, did resolve whatever problems Puckett had identified. (Int. F-222.)

Intervenors appear to suggest that Puckett was never able to carry out his duties effectively because he was the target of a conspiracy to prevent him from doing so. We are told that Puckett was never allowed to supervise the welding inspectors, as he was hired to do and as his successor, Tony Simile, has done. (Int. Br. at 20; Int. F-220.) No record citation is offered for this free-form improvisation, nor could one be;

Intervenors offered no evidence on the subject. We are also told that Puckett was prevented from carrying out his other job functions because he was "denied necessary formal certification, ostensibly for failure to successfully complete" his practical examination. (Int. Br. at 20.) Apparently, Comstock management showed improper animus against Mr. Puckett by not exempting him from the testing requirement for certification. In addition to its lack of support in the record, this far-fetched theory of a conspiracy to hamstring Puckett's effectiveness is inconsistent with the theory that he was fired for identifying a QC breakdown. The conspiracy would have had to begin, not when Puckett recommended work stoppages and wrote the "total breakdown" memo, but as soon as he arrived on site. Intervenors do not attempt to explain why, if Comstock management were disposed to do this, they would have hired Puckett as their welding Level III to begin with. To the contrary, the hiring of a Level III inspector itself demonstrates Comstock's commitment to improving the quality of its welding program.

Intervenors concede that identifying, evaluating and finding appropriate resolutions for problems in Comstock's welding QC program was central to Puckett's job as described to him by DeWald. (Int. F-221.) Nonetheless, they characterize Puckett as conscientiously identifying problems while receiving little assistance or direction from management. (Int. Br. at 19-20.) They tell us that when he pointed out problems in the welding program to DeWald, his words fell on deaf ears. (Int. Br. at 20.) These criticisms, which again imply that management was responsible for Puckett's ineffectiveness, are misguided.

Mr. Puckett was hired to actually take charge of the Comstock welding program. He was not supposed to need direction from DeWald. He was supposed to be the expert himself, to identify and also to resolve problems on his own initiative. (App. F-257.) Puckett seems never to have understood this, although it had been explained to him. (App. F-261; Int. F-221.) In approving Puckett's second stop-work request, DeWald made it plain once again that Puckett was expected to resolve the problems he found. (App. F-273.) Puckett seems to have felt that his responsibility was to bring problems to DeWald's attention, and when DeWald expected him to solve them, he became frustrated because he thought DeWald was ignoring the problems. (Puckett, Tr. 5343, 5468-5469.)

"As final recourse", Intervenors tell us, Puckett wrote his August 22, 1984 memo to DeWald. (Int. Br. at 21.) Intervenors, however, appear unable to settle on a single version of this story. The first version asserts that the memo was a serious recommendation to stop work because the QC program was dangerously approaching complete breakdown and that Puckett was fired in retaliation for writing it. (Int. F-216; Int. Br. at 17-18.) The second version is that the memo was an informal, personal note, addressed simply "Irv" -- as from one old inspector to another -- intended to provoke frank discussion. (Int. FF-216-218.) The chameleon nature of this memo, of course, has its origin in the record. On the one hand, there is the doom-and-gloom wording of the memo itself. On the other, there is Mr. Puckett's belated explanation that the memo was "drastic" and "a little strong," and that he never expected work to be stopped.

(App. F-296.) Rather, he expected the memo to lead to a comprehensive discussion with DeWald of problems he had identified. (App. F-296.) Stretched between these extremes, Mr. Puckett's credibility snaps. If he chose to dramatize a series of perceived problems that he did not know how to resolve by charging total breakdown and recommending total work stoppage, he can hardly complain if DeWald took his memo as evidence of poor judgment and inability to discharge his responsibilities effectively.

Intervenors attempt to bolster the first version -- the doom-and-gloom version -- of the memo by telling us that Puckett's concerns were "remarkably prophetic" and were confirmed by Simile, the Staff and the evidence in this case. (Int. Br. at 18.) First we are told that "nearly all" of his technical concerns were validated by Simile and the NRC Staff (Id.) This is a blatant misrepresentation of the record. It is also at odds with the theory that Puckett was fired to silence his concerns. What sense would it make to fire Puckett only to have his replacement be asked to evaluate and disposition the same problems? The truth is that when Simile took over as Comstock's welding Level III he evaluated the Comstock welding QC program, including Puckett's concerns. He identified a number of problems with the program, including a few recognized by Puckett. Unlike Puckett, he proceeded to resolve those problems. (App. FF-274, 301-307.) NRC Inspector Schapker also investigated Puckett's concerns and, contrary to Intervenors' statement, found the great majority of them to be without validity. Out of all of Puckett's concerns, Schapker found one minor violation of regulatory

requirements. (Staff FF-177-178; App. FF-272, 275, 280, 294, 311-319.)

In the same vein, Intervenors claim that Puckett's "diagnosis of an approaching breakdown in the Comstock QC program itself is confirmed by the evidence in this proceeding." (Int. Br. at 18.) (Puckett's comment, of course, referred only to the welding QC program.) Intervenors do not deign to tell us what evidence they refer to; presumably the totality of the evidence in this case, which they believe establishes systematic harassment of inspectors. This, however, was not one of Mr. Puckett's concerns. Although his memo contained a general reference to morale problems, Puckett testified that he never observed harassment. (Tr. 6255.) Rather, the "breakdown" Puckett referred to was attributable to problems he thought he had identified in Comstock's welding procedures. (App. FF-288, 291.) It is difficult to see, therefore, how even Intervenors' view of the evidence "confirms" Puckett's "diagnosis."

(b) Seeders.

Intervenors really do not disagree with Applicant's premise that John Seeders' work as a calibrations inspector was substandard, as evidenced by repeated procedural violations. (Int. Br. at 32-33.) They merely attempt to shift much of the blame for his derelictions to Comstock management. They have two arguments for this: First, management should have supervised Seeders more closely to prevent him from violating procedures. (Int. Br. at 27-28.) Second, management should have caught Seeders sooner when he did violate procedures. (Id.) Neither argument carries much weight.

It is true, as Intervenors point out, that Inspector Snyder, Seeders' successor, complained that his supervisor, Rick Saklak, was not knowledgeable in calibrations. (Tr. 4218.) Saklak had also been Seeders' supervisor. Snyder also testified however, that when Saklak did not know the answer to a question about calibrations work, he would refer Snyder to Seltmann, who did give him correct answers. (Id.) Moreover, Snyder agreed that the procedure was clear on its face, so that he really didn't need a supervisor with tremendous understanding. (Tr. 4221.) The same comments should be applicable to Seeders. There is simply no evidence, either that Seeders' failure to issue ICRs was attributable to the lack of a supervisor who could explain the procedure to him or that he ever asked anyone about this procedural requirement.

The argument that the extensive problems with Seeders' records should have been caught by Comstock QA audits and surveillances before May 1984 may be true, but it hardly absolves Seeders of blame.[7/] He was a trained and certified inspector. We are told that Mr. Seltmann, as QA manager, had an interest in ascribing the calibrations problems to Seeders' derelictions and not his own failure to catch Seeders. (Int. F-306.) The record does not establish whether Seltmann's audits were deficient, nor is that in issue. Perhaps Seeders' problems should have been

---

7/ Indeed, earlier audits of Seeders' calibration inspections by both Comstock and Edison QA disclosed many shortcomings in his inspection activities. (See Seeders at Tr. 7295-97, 7307.)

caught earlier. When they were caught in May 1984, however, Comstock took appropriate retrospective action by initiating a records review to determine the scope of the deficiencies and took appropriate prospective action by training Seeders to prevent recurrence. (App. FF 92-93.) It was only when follow-up investigations in September 1984 revealed that Seeders was perpetuating the same violations that he was removed from the calibrations area. (DeWald, Prep. Test. at 37-38 ff. Tr. 1700.)

In fact, the record indicates that by September 1984 Seeders had shown himself to be virtually untrainable. The salient finding of the May 1984 Edison QA audit was that Seeders was often not issuing ICRs for out-of-calibration tools as required by procedure. (App. F-91.) One of the corrective actions was to retrain Seeders. (App. F-92.) Seltmann's investigation of Seeders' recent work in September 1984 showed that Seeders was still failing to write ICRs on out-of-calibration tools. (App. F-245.) Intervenors are incredulous that DeWald and Seltmann could give any weight to the retraining session since Seeders testified that it only lasted 10 minutes. (Int. FF-305, 306.) The issuance of an ICR for an out-of-calibration tool, however, should be a straightforward, readily understood requirement. In how many different ways can a man be told that the procedure requires him to write an ICR each and every time he finds a tool out of calibration? Inspector Snyder testified that to the extent Seeders' procedural violations were obvious, it indicated that Seeders was unable or unwilling to follow procedures. (Tr. 4260; App. F-252.) Snyder concluded that it was proper to remove Seeders from the calibrations area

because otherwise the whole program could have been jeopardized. (Tr. 4261-62; App. F-252.)

Intervenors spin out a quite incredible theory that only after Seeders' August 17, 1984 letter complaining of harassment did management mount a review of calibrations inspection records. They of course infer that the review was undertaken to build management's case against Seeders. (Int. Br. at 32.) More unfair yet, in Intervenors' view, is that management found what it was looking for -- Seeders' records were a mess. (Id.) It is difficult to know how Intervenors can argue in good faith that the calibrations record review was initiated after August 17 when they give a detailed account of Seeders' own efforts on that review over the course of the summer. (Int. Br. at 28-30; Int. FF-309-313.) Moreover, the suggestion that the review was undertaken to build a case against Seeders is gratuitous speculation based on Intervenors' erroneous assertion of the starting date. The review was undertaken, as Intervenors themselves acknowledge, at the request of Edison QA to determine the extent of deficiencies identified in the Edison audit. (Int. Br. at 28; Int. FF-307-311.)

In fact, there were two investigations of Seeders' work performance undertaken after August 17, 1984, one by Seltmann and one by Edison QA. (App. FF-245-247.) Instead of arguing that these were initiated to build a case against Seeders, Intervenors simply ignore them. Does the timing of these reviews indicate that they were undertaken to find a pretext for firing Seeders? Not at all. As indicated above, the May 1984 Edison QA audit had identified serious problems with Seeders' performance, and the

action taken to prevent recurrence was to retrain him. A follow-up, to see whether corrective action has been effective, is standard QA practice. Here both Seltmann and Edison QA followed up by reviewing Seeders' performance since the previous audit findings. (App. FF-245-247.) Both found that corrective action had not been effective, and that the same problems -- notably failure to issue ICRs -- persisted in Seeders' work. (Id.)

In their summation, Intervenors ask the Board to find that Seeders was transferred for improper motives rather than poor work performance for three reasons: (a) Seeders' work was reviewed not long after his August 17 letter; (b) management was really responsible for Seeders' problems; (c) Seeders was transferred during the period when Comstock was eliminating its inspection backlog. (Int. Br. at 34.) The first two have been dealt with above; the third need not detain us long. It is true that in late September of 1984, when Seeders was transferred, Comstock was completing its backlog elimination effort. (Shamblin, Prep. Test. at 16-17 ff. Tr. 16274; App. F-24.) It is not clear, however, why this makes it more likely that Seeders' transfer was improper. Seeders was not part of the backlog reduction effort; there was no backlog of calibrations inspections, as indeed Intervenors tell us. (Int. Br. at 27.)

Intervenors end with an imaginative flourish. They began by telling us that Seeders was transferred because he had complained about harassment. (Int. Br. at 25.) They end by telling us that, like Puckett, Seeders was removed because he had charged that there was a breakdown in the Comstock QA program: "Blame the messenger and his message will be ignored." (Int. Br.

at 34.) The problem with this dramatic parallel is that Seeders never made the charge in question. Intervenors, of course, do not supply a record citation. It is true that Seeders' August 17, 1984 letter to DeWald contained a general reference to poor morale and inspectors' dissatisfaction with the new pay structure and stated that 30 inspectors had recently left Comstock. (Int. Ex. 23.) In fact, as DeWald knew, only 6 inspectors had left. (App. F-107.) In any case, it is difficult to see how these statements in Seeders' letter translate into a charge of QA breakdown. Moreover, it is hard to believe that Comstock transferred Mr. Seeders in order to ignore a charge he never made.

(c) Archambeault and Martin.

It is initially surprising that Intervenors appear to regard the Archambeault and Martin incidents as among the most important counts of their indictment. Both incidents are trivial. Mr. Archambeault is a man easily aggrieved, and Intervenors make far more of Mr. Martin's incident than he does. Intervenors have abandoned on brief many equally trivial allegations of harassment.[8/] It soon becomes apparent, however, that

---

8/ In their findings, Intervenors have abandoned a number of allegations of harassment and/or discrimination, including the following: (1) the termination of Hunter and Arndt (App. FF-340-363); (2) Lechner's laughter (App. F-48); (3) Martin's losing the tape measure (App. F-49); (4) Saklak's alleged threat to fire Holley if he went to Applicant's site organization without permission (App. F-52); (5) Saklak's alleged belittling of Martin for objecting to his use of a document review procedure checklist (App. FF-54-55); (6) Saklak's crumpling a paper on

(Footnote Continued)

to bolster their charges of widespread and long-standing harassment, Intervenors want very much to point to something that did not occur within the mid-1984 to March 1985 time frame. These incidents demonstrate, in Intervenors' view, that "an atmosphere of harassment and production pressure" continues up to the present at Comstock. (Int. Br. at 35.) Intervenors do not supply a plausible motive for this alleged conduct by Comstock management. In the 1984 time frame, Intervenors can at least point to the fact that Comstock had a great deal of work to cope with because of the inspection backlog. In 1986 the backlog had long since been eliminated and work was winding down on Edison's last nuclear project. (App. F-24.) If anything, the temptation, for contractor management, as well as workers, would have been to stretch the work out, not speed it up.

With respect to Mr. Archambeault Intervenors tell us that Comstock's actions were "clearly motivated by Archambeault's expression of quality concerns." (Int. Br. at 36.) What actions? Failing to transfer Archambeault from second to first shift until several months after he first requested it. It is undisputed that Comstock had a pressing need for inspectors for the second shift cable-pulling effort during those months and that Archambeault's request was granted when the crew of

---

(Footnote Continued)
Martin's desk (App. F-60); (7) DeWald's reprimand of Martin for bypassing his lead inspector and going directly to Sargent & Lundy (App. FF-58-59); (8) Seese's moving Martin's desk (App. FF-322-327); (9) Gorman's feeling harassed because DeWald asked him to retrieve documents from the vault (App. F-114).

electricians whose work he was inspecting was transferred to first shift. (App. FF-365, 372, 377-79.) What is the evidence, then, that the delay in granting Archambeault's request constituted retaliation for Archambeault's expression of quality concerns? A slender thread: Tony Simile told Harry Revels he felt he was in an awkward position. He felt that if he transferred Archambeault the act might be misconstrued as removing him from an area where he had expressed concerns. On the other hand, he thought that not transferring Archambeault would be misinterpreted as punishing him for raising those concerns. (App. F-374.)

Applicant argued on brief that Simile's denial that this perceived predicament played a part in his decision not to transfer Archambeault at that time was credible, because the essence of the predicament he correctly perceived was that he was damned if he did and damned if he didn't. (App. F-375.) Intervenors acknowledge only half of Simile's concern, that transferring Archambeault would be interpreted as harassment, and they argue that Simile's motive in not granting the transfer at that time was obviously tainted. (Int. Br. at 38-39.) But even if Intervenors' version were correct, it does not make out a case of retaliation. Simile, in their view, was not failing to transfer Archambeault in order to punish him for expressing quality concerns. He was doing so in order not to fuel an argument that he was taking discriminatory action. It cannot fairly be said that this would be retaliation under the statute or the regulations.

Intervenors also point out that Archambeault's transfer request was granted after he had complained to NRC and given a deposition in this case. (Int. Br. at 36.) Intervenors apparently wish to suggest that Archambeault was improperly transferred to keep him quiet. They do not take the next logical step, however, and suggest that the crew whose work he inspected was also transferred to the first shift to effectuate this purpose. Moreover, Archambeault's complaint to the NRC is the very reason Intervenors allege to explain why his transfer request was not granted initially. In Intervenors' world the same cause apparently explains opposite effects. In addition, if Comstock management wished to keep Archambeault quiet, it should have been apparent to them after his deposition that the opportunity had passed.

Intervenors also argue at length that Comstock management retaliated against inspector Rick Martin by permanently removing him from inspection duties because he "resisted the introduction of a new production-enhancing measure." (Int. Br. at 39.) Mr. Martin, however, did not believe that he was the victim of retaliation and the record does not support Intervenors' interpretation. (Martin, Tr. 12757.)

In late 1985 and early 1986 Martin was assigned to perform in-process cable-pull inspections on the second shift. (Martin, Tr. 12698.) Martin explained that two different methods are commonly employed for such inspections. Under the first approach, inspectors assist one another in conducting the cable-pull inspection. If a pull is complex, the assigned inspector often asks for assistants, so that one inspector, for example,

stands at each bend that the cable will be pulled through. (Martin, Tr. 12704-07.) This naturally allows the pull to proceed more rapidly, because the inspector need not establish hold points for the craft. (See, Martin, Tr. 12765-66.) The other approach is known as the "pull and coil" method. Here one inspector follows the pull, and if the pull involves multiple bends or wall penetrations, the craft will be required to stop pulling at various points so that the inspector can move with the pull and inspect at those points. (Martin, Tr. 12708, 12765-66.)

In late April 1986, a new lead and supervisor, Mike Lechner and Bob Tuite, respectively, came on the second shift, where most of the cable-pulling was done. They had previously been on the first shift. (Martin, Tr. 12699, 12701, 12703, 12710.) The first night Tuite called a meeting of the inspectors and explained that he and Lechner had come on the shift to protect Comstock QC management and inspectors from being blamed for craft's failure to meet its schedule. (Martin, Tr. 12702, 12758.) Tuite said it was acceptable for inspectors to assist each other on cable-pull inspections and said there would be no problem with reasonable requests for assistance. (Martin, Tr. 12703.)

That same evening Martin asked his new lead inspector, Lechner, for assistance on a relatively complex pull. Lechner wanted Martin to inspect the pull without assistance. (Martin, Tr. 12714-15.) Although the "pull and coil" technique was commonly employed, Martin had not yet used it during his six months as a cable pulling inspector. (Martin, Tr. 12771-72.) Martin explained to Lechner that he didn't feel comfortable

inspecting the pull by himself. Lechner responded that on the day shift, the operation with which he was familiar, cable-pull inspections were routinely performed by one inspector, and he noted that Comstock's procedures did not require multiple inspectors on a pull. (Martin, Tr. 12714-15.) Martin acknowledged in his testimony that it would have been feasible to use the pull and coil method to perform this inspection alone. (Martin, Tr. 12744, 12708.)

Martin did not bring the matter to the attention of Tuite, who that evening had explained that reasonable assistance on pulls would be provided. (Martin, Tr. 12739-40, 12703.) Because he was uncomfortable about the position Lechner had taken, however, Martin wanted written confirmation. He wrote a memo asking for assistance and presented it to Lechner, who refused to sign it. (Martin, Tr. 12717-18.) When Martin again stated that he didn't feel comfortable doing the pull alone, Lechner assigned the pull to a more experienced cable-pull inspector. (Martin, Tr. 12718, 12720.) The next day Martin was assigned to perform hold tag verifications, a project which needed to be performed periodically and which he had performed in the past. This took about a week to complete. Martin learned that the other inspector had been assigned to replace him with the cable pulling crew whose work he had been inspecting. (Martin, Tr. 12752, 15721-22.) Martin attempted to arrange a meeting with Tuite and Lechner to express his concern about his disagreement with Lechner, and when the meeting fell through he went to the NRC. (Martin, Tr. 12728-33.) The NRC investigated Martin's concerns. (Martin, Tr. 12736-37.)

Shortly after these events, Martin was transferred from the second shift at his own request because of another incident. (Martin, Tr. 12724, 8392-94.) Jerry Krone, a cable-pulling foreman, was upset with Martin because he understood that Martin had called him a Nazi. (Martin, Tr. 9473, 9479.) This personality conflict prompted an incident in which Krone taunted and pushed Martin. This incident in turn led Comstock to fire Krone and poisoned Martin's relationship with cable-pulling craft personnel. (Martin, Tr. 12724, 9590-92, 8393-94.) Martin testified that he no longer felt he was able to inspect in the field because of his conflict with Krone. (Tr. 8391.) Martin was transferred to the first shift, where he worked for several months as a Technical Statistician for the Status Support Group. (Martin, Tr. 12724-26, 8263, 8434-35.) In September he was again transferred at his request, this time to the third shift to perform configuration and concrete expansion anchor inspections. (Martin, Tr. 12726-27.)

Intervenors' version of this story is inconsistent with Martin's testimony on several key points. First, there is no evidence that Tuite and Lechner were changing policy and introducing a "new, production-enhancing measure" on second shift. Before their arrival, both multi-inspector and single-inspector pulls had been common, and requests for assistance were not always granted. (Martin, Tr. 12707-08, 12771-72, 12704.) Moreover, Lechner's denial of Martin's request for assistance clearly did not betoken a change in policy, because other inspectors' requests were routinely granted, as Tuite had said they would be. (Martin, Tr. 12746-47.) Nor is it clear why

Intervenors think that using one inspector per pull increases production. What is clear is that with only one inspector on a complex pull, the craft have to interrupt their pulling and coil the cable at various hold points, thus slowing down their work. (Martin, Tr. 12765-66.) Most important, Intervenors attempt to gloss over the fact that no quality concern is involved. The number of inspectors on a pull is merely a matter of convenience and is not governed by procedure. (Martin, Tr. 12716, 12705; App. Ex. 124.)

Second, Intervenors tell us that Martin was permanently removed from inspection duties for resisting this new production-enhancing policy. This theory omits two salient facts. After his disagreement with Lechner, Martin was assigned other duties. (Martin, Tr. 12721.) His supervening transfer from the second shift, however, was at his own request and stemmed from a different incident. (Martin, Tr. 12724, 8392-94.) Moreover, Martin was returned to inspection duties, again at his own request, several months later. (Martin, Tr. 12726-27.)

The record, which contains only Mr. Martin's testimony on this incident, simply does not show why Lechner refused to grant Martin assistance on the pull or why Martin was transferred the next day to hold tag verification work. Whatever the true explanation, however, it is quite clear from the record that Martin was not discriminated against for engaging in a protected activity under 10 C.F.R. § 50.7. Martin voiced no quality concerns. He and Lechner had a disagreement about which of two inspection methods to use; either method complied with procedures. (Martin Tr. 12714-17.) Martin himself did not view

his transfer to hold tag verification work as retaliation for expressing a quality concern. (Martin, Tr. 12757.) There is no way that it can be so viewed consistent with the record.

D. A Violation of Criterion I Does Not Necessarily Prevent A Finding of Reasonable Assurance.

As explained above, Intervenors have three alternative theories of their case. Either there was a per se violation of Criterion I because DeWald reported to Shamblin; or there was a de facto violation of Criterion I because Shamblin and DeWald cooperated in a campaign of harassment to negate the organizational independence of the Comstock QC department; or there was a presumed violation of Criterion I because some inspectors perceived, no matter how mistakenly, that they were being harassed (whatever harassment may mean). Having arrived by whichever route at a Criterion I violation, Intervenors assert that any Criterion I violation compels denial of an operating license application. They reason that the requirements of Criterion I are "stated in absolute terms" and "may not be waived." (Int. Br. at 45.) Thus, any violation of Criterion I leads to a presumption that inspectors' performance of their quality functions has been impeded. (Int. Br. at 6.) Not only that, but the presumption is that this adverse effect existed on such a scale that there was a pervasive breakdown in the affected QA program. Because there can be no confidence in the integrity of the program, there can be no finding of reasonable assurance that the plant will operate safely, and the license application must be denied. (Int. Br. at 4.)

Intervenors have not detailed their reasoning this clearly because to do so makes it apparent that their legal case is a house of cards. The essence of Intervenors' position is to craft a novel interpretation of Criterion I that will enable them to make an end run around the Appeal Board's decision in Union Electric Co. (Callaway Plant, Unit 1) ALAB-740, 18 NRC 343 (1983). Thus they argue in effect, that any act of harassment or discrimination violates Criterion I and that any violation of Criterion I bars a finding of reasonable assurance. Neither proposition will withstand scrutiny. The errors are most apparent in a key sentence from Intervenors' brief:

> "[The] requirements [of Criterion I] are stated in absolute terms; a license may not be granted absent 'reasonable assurance' that they have been met." (Int. Br. at 45.)

The relevant requirements of Criterion I are most definitely not stated in absolute terms. Moreover the assertion that they are is logically inconsistent with the standard of reasonable assurance on which Intervenors rely in the same breath.

Criterion I on its face does not require that persons and organizations performing quality functions be independent of cost and schedule in any unattainable absolute sense, as Intervenors would have us believe. Rather, it requires that such persons and organizations have "sufficient authority and organizational freedom" to perform their quality functions adequately. To assure this, such persons and organizations must report to a management level "such that this required authority and organizational freedom, including sufficient independence from cost and

schedule when opposed to safety considerations, are provided." (10 CFR Part 50, App. B, Criterion I.) Accordingly, Criterion I on its face mandates an organization that is sufficiently independent of cost and schedule when such independence is necessary to perform its quality functions adequately. Criterion I thus sets up a rule of reason. Infringements on QA independence are measured as to their severity by the extent to which the relevant persons and organizations retain sufficient freedom to perform their quality functions adequately. This is a far cry from the distorted version of Criterion I brandished by Intervenors. (One notes that Intervenors carefully refrain from quoting the actual language of Criterion I in their brief.)

It is by this standard that the Licensing Board must decide whether isolated acts of harassment by an abrasive supervisor in a contractor QC department in fact constitute violations of Criterion I. Applicant submits it is clear on the record that they do not. When Intervenors' counsel made a similar argument in Catawba, the licensing board found as follows:

> Intervenors suggest we find that harassment of welding inspectors at Catawba constitutes a violation of 10 C.F.R. Part 50, Appendix B, Criterion I in that: "Such conduct . . . impugns the authority and freedom of persons in the performance of their quality assurance responsibility." . . . The evidence does not support such a conclusion. The few incidents described did not deter these inspectors from performing their duties, nor was the freedom of the QA program restricted.

Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), LBP-84-24, 19 NRC 1418, 1531 (1984). The same conclusion is compelled by the record in this proceeding.

Let us suppose, however, that Intervenors had demonstrated one or more violations of Criterion I. Would a finding to that effect by the Licensing Board prevent the Board, ipso facto, from finding reasonable assurance that Braidwood would operate safely? The answer must be no. As we have seen, the rule-of-reason formulation of Criterion I itself suggests that a licensing board would have to evaluate how serious and widespread any violation was in evaluating whether there was reasonable assurance. The Appeal Board's Callaway decision, supra, clearly confirms that this is the case. Callaway interprets what "reasonable assurance" means in the context of a quality assurance contention. It does not mean error-free construction. Callaway, supra, 18 NRC at 346. Moreover, it does not mean a perfect quality assurance program, which can be expected to uncover all errors that do occur. Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2) ALAB-756, 18 NRC 1340, 1345 (1983). What "reasonable assurance" does mean in the QA context is confidence in the integrity of an approved QA program, such that its ability to identify and correct errors is not impaired. Thus where Appendix B violations are identified, Callaway teaches that the question is whether there has been a breakdown in QA procedures of sufficient dimensions to raise legitimate doubt as to the overall integrity of the facility. Callaway, supra, 18 NRC at 346.

There is no indication in Commission law that a claimed violation of Criterion I by reason of acts of harassment and discrimination is somehow exempt from the Callaway rationale. Indeed the law is to the contrary. When Intervenors' counsel

made similar claims of Criterion I violations predicated on harassment in Catawba, the appeal board affirmed the licensing board's conclusions that Callaway provided the appropriate framework for the scrutiny of those claims. Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 65 (1985). Thus, freed from the twists and turns of Intervenors' logic, the question the Board must pose is clear: Did Comstock management engage in a pattern of harassment and discrimination that was sufficiently widespread to have a pervasive effect on the adequacy of QC inspections, such that the Board lacks confidence in the integrity of the Comstock QA program? Applicant submits that the record in this case will not support a positive answer to that question. This being the case, Intervenors' contention does not stand in the way of a reasonable assurance finding.

To avoid this conclusion, Intervenors have developed the third of the case theories enumerated above. It matters not whether there was in fact any harassment. So long as someone perceived something they called harassment, no matter how ill-founded that perception was, Edison violated Criterion I. (Int. Br. at 4.) From this false perception there arises a presumption that the quality of the inspections was adversely affected requiring a comprehensive and independent reinspection, preferably of 100% of Comstock's work. (Int. Br. at 6-7, 93.) If this really were the law, in the face of such a perception, no applicant could ever reasonably demonstrate that it had assured quality through any program, no matter how conscientiously implemented. Fortunately, it is not.

Intervenors' illusory concept does not square with the Catawba definition of harassment. Only demonstrable actions taken by a supervisor to modify the actions of an inspector for the purpose of impeding the proper performance of the inspector's task are actionable acts of harassment under Catawba. Ill-founded perceptions of harassment by an inspector or class of inspectors are simply not actionable and, therefore, no presumption can arise concerning the possible effects of such perceptions on the quality of inspections. Intervenors can point to no rule of law that would authorize governmental bodies to regulate on the basis of cerebral ruminations that have no basis in fact.

In this proceeding, however, Edison did not rest on an analysis of whether the interaction between Comstock QC inspectors and their management met the Catawba definition of harassment or whether the theory of perceived harassment was viable. Rather, exhaustive evidence of the effects of harassment, real, perceived or imagined, on inspector performance was presented and analyzed. This evidence took the form of reinspection data from two data bases, CSR and PTL, which correlated inspector performance with asserted incidents of harassment. The data is dispositive that there were no effects on inspector performance attributable to harassment, regardless of its definition.

E. The Reinspection Evidence Refutes Intervenors' Claims.

In attempting to reconcile their claims with the results of the BCAP and PTL reinspection programs, Intervenors fall into startling contradictions. Intervenors say:

> The evidence before this Board shows beyond doubt that the atmosphere at the Comstock QC Department was poisoned by systematic and pervasive harassment and production pressure on a scale which distinguishes Braidwood from any recorded case in the annals of licensing proceedings . . . . We can say with confidence, therefore, that the problems at Comstock were systematic, that its effects were clearly not isolated or random but were pervasive . . .
>
> * * *
>
> The record of the Comstock QC department at Braidwood reflects both a programmatic, systematic and pervasive problem and a widespread and pervasive effect on the quality control inspectors . . . [T]he massive and widespread nature of the quality assurance flaws reflected in this record distinguish this case from Callaway and all others.

(Int. Br. at 43-44, 54 (emphasis supplied).) But in confronting the reinspection evidence, Intervenors start back-pedalling:

> It does not inevitably follow from a widespread perception of production pressure that massive and universal work performance [sic] will be evident at Comstock . . . . It would be entirely consistent with [Intervenors' expert testimony] to find that not all inspectors suffered declines in performance, or not all at one time, or that the declines in performance were on a smaller order than 30% . . . .
>
> * * *

> It is apparent that work performance [sic] would have to be extreme, long lasting, and very widespread to manifest themselves as significant under [Frankel's] analysis . . . .
>
> * * *
>
> In short, Edison simply concocted their extreme interpretation of Intervenors' case out of thin air.

(Int. Br. at 81, Int. FF-849) (emphasis supplied). Thus, effects which are characterized as "massive" and "pervasive" turn out to be surprisingly subtle and elusive.[9/]

Intervenors suggest what they apparently contend is a fairer interpretation of their own contention: if an incident of harassment caused 10% of the Comstock QC inspectors to lower their performance by 30% for a period of a full month, the overall CSR agreement rate for the quarter would be reduced by only 1%, an effect which they claim would be undetected by Edison's trending analysis. (Int. Br. at 82.) But consider the example. Is an event affecting only 10% of the inspectors "powerful," "pervasive" or widespread"? More importantly, are we only looking for one event of harassment in a three month period? Are we looking for a single raindrop or for a rain shower? Would

---

9/ Similarly, Intervenors refer to the problems at Comstock as "programmatic" numerous times in their brief. (See Int. Br. at 53, 54, 56, 57, 59, 94.) Intervenors repeatedly deny that any problems at Comstock were "isolated." (Int. Br. at 44, 54.) Yet they also contend that BCAP was "not adequately designed to respond to the problems identified in Intervenors' testimony" because "BCAP was not designed to look for isolated hardware problems however severe they might be. Rather, the CSR was designed to look only for recurring, programmatic design significant discrepancies." (Int. Br. at 89-90, emphasis in original).

Intervenors concede for one moment that only one such incident of harassment occurred in any calendar quarter since 1982? To the contrary, Intervenors have argued that there are "many" incidents of harassment, intimidation and under production pressure in this record and the incidents in the record only constitute "the tip of the iceberg" because people are allegedly afraid to come forward. (Guild, Tr. 7917-18.) It's quite clear that this "once in three months" example is inconsistent with Intervenors' own argument (assuming it's more than rhetoric) that there was "programmatic", "systematic", "pervasive", "massive", "powerful", "historic" and "widespread" harassment, intimidation and production pressure at Comstock.

Moreover, Edison's trending is more sensitive than Intervenors admit. Even if there was, on the average, only one such incident of harassment, (that is, an incident causing a 1% decrease in overall agreement rates for a three month period) in each calendar quarter following Saklak's arrival in the Comstock QC department, Edison would have had a good chance of detecting this effect in trending the CSR results. Dr. Frankel testified that his statistical calculations would with 99% confidence detect a variation of as little as 0.8% in the overall agreement rates in the entire population sampled by BCAP before and after July 1, 1982. (Frankel, Reb. Prep. Test. at 19-20 ff. Tr. 17082; Tr. 17089-90.)

Intervenors argue that for purpose of its trending analyses, Edison incorrectly assumes that QC inspector performance was acceptable prior to July 1, 1982. (Int. Br. at 79.) That's not true. Edison merely postulates (in accordance

with what we understand Intervenors' position to be) that Saklak's arrival made things worse. Similarly the use of the August 1, 1983 date for trending analysis postulates that DeWald's arrival made things worse. If these dates are not meaningful in assessing variations in inspector performance over time, Intervenors' contention, the representations of its counsel and its brief to this board contain fundamental inconsistencies in logic. This is so because the premise of Intervenors' case is that Saklak and DeWald had a pervasive debilitating effect on QC inspector performance.

Intervenors argue that the relative proportion of subjective (welding) and objective (non-welding) attributes in the CSR data base changed over time. They say that the effect of this would have been to increase agreement rates. Since the CSR agreement rates were generally constant, Intervenors argue that there must have been an offsetting decline in QC inspector accuracy over time. (Int. Brief at 79 n.*; Int. FF-841.) Intervenors are mistaken. The CSR results were presented for welding only (thus eliminating the subjective/objective mixture) and those results show no decline in agreement rates over time. (See Del George, Reb. Prep. Test, Attch. 2C (Del George-2 and-3) (Rev. 2) ff. Tr. 16740. In fact, the overall CSR agreement rates for welding only, calculated on a per weld basis, increased from 83.31% prior to July 1, 1982 to 90.28% after July 1, 1982. The cumulative agreement rates for both objective and subjective attributes also increased from 85.06% before August 1, 1983 to

90.08% after August 1, 1983. (Frankel, Tr. 17155-57.)[10/] In addition, Dr. Frankel testified that the PTL welding agreement rates increase very slightly over time, and those agreement rates do not include any mixture of subjective and objective attributes. (Frankel, Reb. Prep. Test. at 26-27 ff. Tr. 17082.)

Intervenors point out that the CSR data does not address events occurring after June 30, 1984, the BCAP cut-off date. They claim that "many -- indeed the most severe -- incidents of harassment and production pressure in this record occurred" after June 30, 1984. (Int. Br. at 8, 74-75.) But the PTL data extends from July 1, 1982 to June 30, 1986. (App. F-939.) It is fully consistent with the CSR results from the period prior to June 30, 1984. (Del George, Tr. 16801-02.) If things got significantly worse after June 30, 1984, one would expect that the PTL data would reflect a worsening trend. It is true that the PTL data base is not a statistically random sample, but it is a very large sample. It includes 10% of all the welding and 28% of the welded components accepted by Comstock QC inspectors over the four year period from July, 1982 to June, 1986. It includes fully one quarter of all the welds QC accepted by Comstock during the critical period from November 1984 to April 1985, the period leading up to and including the visit of the 24 Comstock QC inspectors to the NRC and the discharge of

---

10/ In addition to analyzing CSR welding data only, Dr. Frankel performed a statistical procedure called "standardization" to control for the subjective/objective variation discussed by Intervenors, and again found no statistically significant difference in agreement rates. (Frankel, Tr. 17095.)

Saklak. (D'Antonio, Reb. Prep. Test., Attch. 2C (D'Antonio-2) ff. Tr. 15568.) If there were "many" incidents, even on the modest scale suggested by Intervenors (that is, many incidents, each causing 10% of the inspectors to reduce their performance by 30% for a full month), one would expect such occurrences to be reflected in the PTL data base, but they aren't.

Intervenors assert that "Del George and Marcus did not even pretend to examine individual performances within the 34 months when overall agreement rates were deemed acceptable." (Int. Br. at 86 n. *.) That is true for Marcus but not for Del George. (App. F-950.) Intervenors observe that 19 of 100 inspectors in the PTL sample achieved agreement rates less than 90% for the entire four year period from July, 1982 to June, 1986. They also observe that allegations of harassment fall within this same period; they then assert that "Without more, a causal connection [between poor performance and harassment] can be inferred." (Int. Br. at 85-86.) Such an inference can only be made if one ignores the evidence which describes who the inspectors are, the actual agreement rates achieved, the months in which poorer performance occurred, and the sufficiency of the data. As Marcus points out in his testimony, there is insufficient data to judge the performance of four of these inspectors, (Arndt, Aclaro, Baxter and McGuigan); one of them (Asmussen) was a consistently poor performer, and the remaining fourteen have overall agreement rates falling in the range 81% to 89% (91% to 99% for most of them when the lowest month is subtracted from the data). (Marcus, Reb. Prep. Test. at 28-30, Attch. 2C (Marcus-3) ff. Tr. 15568.) Del George concluded that

only 3 inspectors' performance was unacceptable (Asmussen, Arndt and Hunter). (Del George Reb. Prep. Test. at 35-36 ff. Tr. 16740.)

Intervenors are finally reduced to throwing out questions about Edison's trending analysis which, they say, are unanswered on this record. Edison's testimony, they claim, is conclusory and presented by witnesses with an interest in the outcome of this proceeding, and therefore entitled to no weight. (Int. Br. at 86.) Edison's testimony is not conclusory, and Intervenors had the opportunity to ask questions on this subject during cross-examination.[11/] But the most compelling response is this: Intervenors have the CSR and PTL data; they have the printouts; they even have the CSR data on a computer disk. Intervenors certainly know the allegations of harassment and intimidation and production pressure in this proceeding. They have had months to study both. If there were any way to make the reinspection evidence fit their case -- any incidents of poor inspector performance which could reasonably be correlated to harassment -- any significant errors or omissions in Del George's summary of Intervenors' allegations of harassment, intimidation and production pressure (Int. Ex. 191) -- they could have

---

11/ Moreover, the questions Intervenors ask in their brief and findings were answered in the hearings. The specific incidents of harassment and production pressure considered by Del George are shown in Int. Ex. 191. Del George made no assumptions at all in interpreting the data, except that he assumed that alleged causes and effects could be correlated in time. (Del George, Reb. Prep. Test. at 10-12 ff. Tr. 16740.) This is an assumption endorsed by Intervenors' own expert Dr. McKirnan. (McKirnan, Tr. 10390.)

presented this information in their findings.[12/] Intervenors haven't done so because it can't be done. The reinspection evidence refutes their claims.

F. The Reinspection Evidence Is Reliable.

Intervenors argue that the results of the BCAP and PTL reinspection programs cannot be trusted for various reasons. Since most of these arguments were anticipated in Edison's initial brief and its proposed findings of fact, they can be dealt with summarily below:

Intervenors argument that the BCAP "violated" the independence criteria of the "Dingell letter" is without merit. (Int. Br. at 69, 71, 73; Int. FF-815, 816, 819.) That letter does not establish any NRC requirements for the BCAP program. Moreover, it is simply improper to mark an exhibit as "an aid to cross-examination" (Tr. 13731), never move it into evidence and

---

12/ Intervenors' lone attempt to make use of this data is a claim that the CSR per weld data varies by as much as 50% from quarter to quarter. They then incorrectly assert that Del George does not attempt to account for these variations, or explain why they are unrelated to incidents of harassment. (Int. Br. at 82.) In the first place, the largest variations in CSR weld results are less than 50% and they occur in the second quarter of 1982 and the second quarter of 1983 - the quarters immediately preceding Saklak's arrival and DeWald's arrival in the Comstock QC department. (See Del George, Reb. Prep. Test, Attch. 2C (Del George-3) ff. Tr. 16740.) As Del George observed, the agreement rates increase after Saklak and then DeWald show up. There is very little data for the second quarter of 1982, (See Del George, Tr. 16905-08) but the improving trend from the second quarter to the third quarter of 1983 is clearly inconsistent with Intervenors' theory of this case. (See Del George, Tr. 16934-43.)

then rely on it as substantive evidence in brief and proposed findings.

With respect to Intervenors' more general argument about the asserted lack of independence of BCAP, it is a sufficient response to observe that the program was carried out under an intense regulatory spotlight. The BCAP Task Force's actions were reviewed by BCAP QA, the IEOG, and the NRC Staff. (App. FF-911-912.) Sargent & Lundy's work was reviewed by the BCAP Task Force (Stone & Webster), the IEOG, and the NRC Staff. (App. F-910.) We believe Dr. Kaushal and Edison's other witnesses credibly testified as to the integrity of the BCAP program. In addition, the Licensing Board heard from NRC Inspector Ron Gardner who was there, day after day, reviewing the BCAP checklists, accompanying the inspectors in the field, writing a notice of violation involving Neil Smith's BCAP QA organization for a minor procedural problem to emphasize the need for rigorous adherance to requirements, having a very direct conversation with Dr. Kaushal about inspector errors. (App. FF-913, 917-18, 920.) Mr. Gardner has also vouched for the integrity of the BCAP program, and his testimony carries a great deal of weight.[13/]

13/ The BCAP report was not placed in evidence and therefore Intervenor's insinuations about Edison's attorneys' role in drafting the report and the number of photocopies made of various drafts are irrelevant. It should be noted however that Mr. Gardner, who got his information about BCAP in the field, "upwind" of Edison's attorneys and Edison's management, did not consider the report to be misleading in any way. (Gardner, Tr. 17632, 17644, 18350, 18359.)

In addition the BCAP program has additional credibility in the present context because it was designed and carried out for reasons unrelated to Intervenors' harassment and intimidation claims. The CSR data base, which for the first time correlated reinspection results to individual Comstock QC inspectors, was not created until 1986, after the BCAP was over. (App. F-902.) A similar statement can be made about the PTL data base for the period prior to June 1985. (App. F-947.) Thus the BCAP data and the PTL data was collected without regard to its eventual use in analyzing Comstock QC inspection performance for purposes of this proceeding.14/

Intervenors' focus on the origins of BCAP is irrelevant to the issue of the credibility of the BCAP results. (Int. Br. at 70-71.) There is no disagreement that BCAP was undertaken in response to NRC concerns. (O'Connor, Tr. 10056-58, 10060-61; Gardner, Reb. Prep. Test. at 2 ff. Tr. 17606.) Whether the NRC

14/ Intervenors suggest the exclusion of invalid and out of scope observations skew the CSR results. Int. Br. at 77-78. Invalid observations do not represent Comstock QC inspector errors and therefore should not be counted against them. (Kaushal, Reb. Prep. Test. at 22-23 ff. Tr. 13068; Kaushal, Tr. 14191-92; Orlov, Tr. 14045-62.) Out of scope observations could not be counted without distorting the results unless one also counted the number of out of scope inspection points which were acceptable, which is unknown. (Orlov, Tr. 14019-22.) Thus for example we do not know whether the inclusion of cable pan hanger configuration would have resulted in an increased proportion of overlooked defects, as Intervenors claim, because inspection points and discrepancy points were never counted for such observations. (Kaushal, Tr. 13378-80; Kostal, Tr. 14874.) We do know that the decision to declare cable pan hanger configuration observations out of scope preceded and was unrelated to Intervenors' contention (Kaushal, Tr. 13804-806).

required Edison to perform the BCAP, or whether it was undertaken at Edison's initiative is, in the present context, splitting hairs. Moreover, contrary to Intervenors' assertions, Edison was responsive to NRC comments regarding BCAP's design, thereby lending further credibility to the program.[15/]

Intervenors argue that the CSR inspections covered only limited categories of Comstock QC inspectors' work and did not employ the same acceptance criteria as the Comstock QC inspectors. (Int. Br. at 75-76.) But Del George, who among other things compared the CSR and Comstock inspection checklists, testified that these differences were of no consequence in assessing the quality of the work or the effectiveness of QC inspections. (App. F-916.) For example, Intervenors apparently fault BCAP for not reinspecting work that the Comstock QC inspectors rejected. (Int. Br. at 75.) But it's the work that the Comstock QC inspectors accepted that matters from a safety standpoint -- and from the standpoint of Intervenors' own contention. Similarly, the fact that attributes with no

---

15/ Intervenors state that the NRC made 27 specific recommendations for changes in the BCAP design and imply that Edison rejected all but one. (Int. Br. at 71; Int. F-813. This is false and extremely misleading. As a review of App. Ex. 128 shows: two of the 27 NRC recommendations were really requests for information, which Edison provided; Edison agreed to carry out 15 other NRC recommendations in the BCAP program; Edison agreed to carry out six more of the NRC recommendations outside the BCAP program; and Edision pointed out that it was already doing three of the things the NRC recommended. Only one NRC recommendation was rejected, and that was the NRC's recommendation that the BCAP director report to the Manager of Projects, Mr. Maiman, rather than to the Project Manager, Mr. Wallace. (App. Ex. 128, Attch. A, p. 5 of 7.)

potential design significance were not included in the CSR is immaterial if the ultimate issue is safety. Intervenors fail to explain why any of the items or attributes excluded from the CSR because they were not potentially design significant, or because they were inaccessible or non-recreatable, or because they were the subject of a pre-existing nonconformance report, would have been more likely to manifest the effects of harassment, intimidation and production pressure than the items which were included and were reinspected. (See Del George, Reb. Prep. Test. at 24 ff. Tr. 16740.) We must recall again that Intervenors' claim is that the effects of harassment were "pervasive".

Finally, Intervenors argue, as expected, that agreement rates are "meaningless statistics." (Int. Br. at 76.) That is not true, for the reasons given in Applicant's brief and findings of fact. (App. PPID at 101-102; App. F-936.) This is not a laboratory experiment in which the object is to measure inspector "accuracy" in any absolute sense. What we are attempting to measure is relative changes in QC inspector effectiveness[16/] over time to determine whether such changes can be correlated with Intervenors' allegations of harassment, intimidation and undue production pressure. For this purpose, agreement rates are the best available trace measure (Hulin, Reb. Prep. Test. at 17 ff.

16/ QC inspector effectiveness and QC inspector accuracy may not be synonymous because the latter term includes the possibility that the inspector will reject good work. The NRC only cares about QC inspector effectiveness -- the ability of inspectors to correctly identify and reject bad work.

Tr. 17924; Hulin, Tr. 17934-35, 18231-32), because they compare Comstock QC inspection results with the results produced by qualified BCAP and PTL inspectors who were not subject to the same alleged harassment.

Agreement rates are the only mechanism for evaluating inspector performance after the fact unless we turn our backs on the original Comstock QC inspections, the CSR and PTL data, and the recommendation of Intervenors' own expert witness (Arvey, Tr. 4434-36, 4442-49) and order a 100% inspection (or something approaching a 100% reinspection) to demonstrate independently the quality of the work. This is the approach now demanded by Intervenors. (Int. Br. at 93.) However, agreement rates based on sample reinspection efforts have been accepted by a Licensing Board as providing additional assurance that Quality Assurance programs have functioned as intended. See Long Island Lighting Co. (Shoreham Nuclear Power Station Unit 1), LBP 83-57, 18 NRC 445, 617-22 (1983).

G. The BCAP Demonstrates That The Quality Of The Electrical Work At Braidwood Is Adequate.

Intervenors argue that the BCAP is not a substitute for the quality assurance program mandated by 10 CFR Part 50 Appendix B. (Int. Br. at 7, 68, 93.) That is true. BCAP only provides additional assurance that the quality of electrical construction at Braidwood is acceptable. (See Gardner, Tr. 17679-80.) BCAP is in addition to, and also a confirmation of, the assurance provided by Edison's overall quality program at Braidwood. Perhaps most importantly for purposes of this case,

BCAP provides a reasonable means for testing Intervenors' claim that a "massive and inexcusable quality assurance breakdown" actually occurred at Comstock due to harassment, intimidation and undue production pressure. (Int. Br. at 44.)

Intervenors argue that the CSR results show "thousands of discrepancies overlooked by QC inspectors (including a substantial proportion of notable discrepancies)." (Int. Br. at 7.) They say that Braidwood is "riddled with defects overlooked by QC inspectors, including many 'notable' defects." (Int. Br. at 88) Intervenors can't have it both ways. They can't emphasize the raw numbers -- 3,758 discrepancy points, of which "no less than" 1057 were notable - without also conceding that, calculated on the same basis, more than 270,000 - more than 98% - of the CSR inspection points were defect-free. (App. Ex. 177.) Likewise, Intervenors can't emphasize that the Comstock QC inspectors overlooked "notable" discrepancies while at the same time remarking that "there is no evidence that a defect which is more serious from an engineering standpoint is more obvious to the inspector." (Int. Br. at 83.) Finally, they can't say that "'notable' defects . . . are the most serious defects from a design significance standpoint" (Int. F-851), (a statement which is, by the way, obviously untrue), and also say that "'design significance' is a concept without relevance to the issue of inspector performance." (Int. Br. at 84.)

More importantly, the raw number of discrepancies identified in the CSR does not, without more, prove the existence of a quality assurance breakdown due to harassment, intimidation and undue production pressure. This is because we don't know how

many discrepancies would be found if a similar reinspection program were conducted at any other nuclear plant. As the Appeal Board observed in Callaway:[17/]

> In any project even remotely approaching in magnitude and complexity the erection of a nuclear power plant, there inevitably will be some construction defects tied to quality assurance lapses. It would therefore be totally unreasonable to hinge the grant of an NRC operating license upon a demonstration of error-free construction. Nor is such a result mandated by either the Atomic Energy Act of 1954, as amended, or the Commission's implementing regulations. What they require is simply a finding of reasonable assurance that, as built, the facility can and will be operated without endangering the public health and safety. 42 U.S.C. §§ 2133(d), 2232(a); 10 C.F.R. § 50.57(a)(3) (i). Thus, in examining claims of quality assurance deficiencies, one must look to the implication of those deficiencies in terms of safe plant operation.

That is precisely what has been done in BCAP, as described in Dr. Kaushal's testimony, Mr. Kostal's testimony, and Mr. Thorsell's testimony, and in the S&L trending analysis (App. Ex. 164). The nature and frequency of occurrence of each identified discrepancy was taken into account. In each case an engineering judgment was made that such discrepancies could be accommodated anywhere in the plant, or that existing walkdown programs would identify and remedy such discrepancies, or (in only two cases) additional walkdown activities were recommended and carried out. Thus these discrepancies do not call into question safe plant operation, or point to the existence of a

---

17/ Union Electric Co. (Callaway Plant, Unit 1) ALAB-740, 18 NRC 343, 346 (1983) (footnote omitted).

quality assurance breakdown. Instead, the BCAP results confirm that the overall quality program at Braidwood, consisting of conservative design, good construction, and adequate quality assurance implementation, is functioning in accordance with NRC requirements.

Edison's analysis of CSR identified discrepancies relies on the concept of design significance. The fact that there were no design significant discrepancies means that there were no discrepancies which, if uncorrected, would have impaired an item's ability to perform its safety-related function. An absence of design significant deficiencies speaks most directly to an ultimate issue in this proceeding: whether Braidwood can be operated with due regard for the public health and safety. In this context, the issue of inspector performance is essentially independent of the issue of design significance. The absence of design significant deficiencies is in conformance with the Commission's Quality Assurance regulations which require that quality assurance programs provide "adequate confidence" that the plant will perform satisfactorily in service and the Appeal Board's Callaway decision which recognizes that perfection in construction and quality assurance implementation is not required.

Intervenors argue that design significance is an "unacceptably lenient, amorphous standard" because S&L had the ability to refine its calculations to show virtually any defect

was not design significant. (Int. Br. at 88-89.)[18/] But the code requirements which define design significance are not amorphous or lenient. Nor are they a moving target. S&L has many calculational techniques to demonstrate that the fixed target established by code requirements is met, all of which legitimately reflect the large design margins which exist at the Braidwood plant. (App. FF-925-928.) These margins are real and they are an important reason why discrepancies like those identified in the CSR are unlikely to lead to catastrophic failures such as the collapse of the walkway at the Kansas City Hyatt. (Kostal, Tr. 15255, 15258.)

Intervenors assert, without evidentary support, that these margins and conservatisms cannot be used by S&L in its design significance evaluations because these margins and conservatisms "are designed in anticipation of uncertainties in operation and unforseeable problems and stresses." (Int. Br. at 89.) This is sheer invention. The record establishes that the margins S&L took credit for are not required by the NRC and arise due to the standardization of components and S&L's explicit recognition that construction work is not always perfect. (App. F-925.) In taking credit for these margins in its design significance evaluations, S&L is using them as they were intended

---

18/ Indeed, Intervenors go so far as to refer to design significant defects as being "mythical." (Int. Br. at 88.) Yet, they also comment that it was a "fortuity" that the Comstock QC inspectors did not overlook any design significant defects. (Int. Br. at 84.) Neither one of these inconsistent statements is correct.

to be used from the beginning of the design effort, more than a decade ago.[19/]

Intervenors also speculate, without any evidentary support, that "[i]t is possible that although no defect in and of itself rises to critical level of design significance, it may be that the mass of defects together does so." (Int. Br. at 89.) But S&L aggregated defects for purposes of its analysis, where appropriate. (See e.g. Kostal, Reb. Prep. Test at 12 ff. Tr. 14270; App. Ex. 170; Tr. 15028-29.) This suggestion really amounts to an unfocussed attack on S&L's design methods, or the code requirements, or both and it is a different contention from that admitted by the Licensing Board in this proceeding. It fails to meet the Commission's requirements for specificity, basis, and timeliness. 10 CFR § 2.714.

Finally, Intervenors point out that the CSR cut off date is June 30, 1984, and therefore the CSR results cannot be used to draw statistical inferences about the quality of Comstock's work after that date.[20/] This Licensing Board is not

---

19/ There is a second kind of design margin, that required by the codes, which was not used in the design significance evaluations. (See Kostal, Reb. Prep. Test. at 18 ff. Tr. 14270; App. Ex. 179.) Code required margins may be intended to accommodate latent defects and uncertainties of the kind Intervenors refer to. (See Kostal, Tr. 15188, 15222.)

20/ Intervenors note that only 24% of the electrical construction items were completed and QC accepted prior to June 30, 1984. They also assert (incorrectly) that BCAP does not permit any conclusion to be drawn with respect to 5% of the electrical construction items sampled in BCAP. They then calculate (again incorrectly) that BCAP only provides 95% confidence that 24%-5% or 19% of the electrical

(Footnote Continued)

limited to drawing statistical inferences. The evidence shows that the design margins at Braidwood are the same, before and after June 30, 1984. (Kostal, Reb. Prep. Test. at 32 ff. Tr. 14270; Thorsell, Reb. Prep. Test. at 19, ff. Tr. 14270.) Finally, the PTL overinspection data, which is fully consistent with the CSR data for the period from July 1982 to June 1984, shows no hint of any drop-off in Comstock QC inspection performance after June 30, 1984. (Frankel, Reb. Prep. Test. at 25-27, Attachment 2C (Frankel-2) ff. Tr. 17082; Del George, Reb. Prep. Test at 36-38, 48-49 ff. Tr. 16740; Del George, Tr. 16801-02.) Under these circumstances it is reasonable to conclude that the overall quality program that produced the acceptable BCAP result has continued to produce adequate electrical work at Braidwood. (See Kaushal, Reb. Prep. Test at 33-34 ff. Tr. 13068.)

(Footnote Continued)
work is free of design significant defects. (Int. Br. at 92; Int. FF-857.) The correct calculation would be 24% -(5% of 24%) or 22.8%. But even this would be inappropriate for two reasons. BCAP supports statistical inferences, not just with 95% confidence and 95% reliability, but at least 95% confidence and at least 95% reliability. (Kaushal, Tr. 14190) Moreover it is not true, as a matter of statistics, that a 95/95 sample does not permit any conclusion to be drawn about 5% of the sampled population. For example, the same sample of 60 which supports a 95/95 statement will support statements made with (approximately) 90% confidence and 96% reliability, or (approximately) 80% confidence and 97% reliability, etc. The statistical inferences derived from a sample are probabilistic statements about the entire sampled population.

III. CONCLUSION

For the reasons stated, the Licensing Board should find in Applicant's favor on all matters put in issue by Intervenors' harassment contention and should authorize the Director of Nuclear Reactor Regulation, upon making the findings required by 10 C.F.R. § 50.57(a), to issue operating licenses for Braidwood Station, Units 1 and 2.

Respectfully submitted,

Joseph Gallo

Joseph Gallo
One of the Attorneys for
Commonwealth Edison Company

ISHAM, LINCOLN & BEALE
1150 Connecticut Ave., N.W.
Suite 1100
Washington, D.C. 20036
(202) 833-9730

ISHAM, LINCOLN & BEALE
Three First National Plaza
Suite 5200
Chicago, Illinois 60602
(312) 558-7500

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
COMMONWEALTH EDISON COMPANY	)	Docket Nos. 50-456
	)	50-457
(Braidwood Station,	)	
	)	
Units 1 and 2)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of Applicant's Reply Brief were served on the persons listed below by deposit in the United States Mail, first-class postage prepaid, this 18th day of February, 1987.

Herbert Grossman, Esquire
Chairman
Administrative Law Judge
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. Richard F. Cole
Administrative Law Judge
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. A. Dixon Callihan
Administrative Law Judge
102 Oak Lane
Oak Ridge, Tennessee 37830

Ms. Bridget Little Rorem
117 North Linden Street
P.O. Box 208
Essex, Illinois 60935

Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Atomic Safety and Licensing
Appeal Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Gregory Alan Barry, Esquire
Elaine I. Chan, Esquire
Office of the Executive
Legal Director
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Robert Guild, Esquire
Douglass W. Cassel, Jr., Esquire
Timothy W. Wright, III, Esquire
BPI
109 North Dearborn Street
Suite 1300
Chicago, Illinois 60602

William L. Clements
Chief, Docketing and Services
U.S. Nuclear Regulatory
Commission
Office of the Secretary
Washington, D.C. 20555

William Little
Director, Braidwood Project
Region III
U.S. Nuclear Regulatory
Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Joseph Gallo

Joseph Gallo
One of the Attorneys for
Commonwealth Edison Company