

AFFIDAVIT

My name is William Ronald McAfee. I am making this statement of my own free will to Emily Ansell, who has identified herself as an investigator for the Government Accountability Project. I am speaking without threat or promise of material benefit. My reason for making this statement is to express my continuing deep concerns over the quality of construction at the Catawba Nuclear Power Station being built in Clover, South Carolina and its ability to operate safely and without harm to public health.

I was employed by Duke Power Company (DPC or Duke) at the Catawba plant from March 1977 to March 1979. I quit my job there as Electrical Quality Control (QC) Inspector in mid-March 1979 because I got fed up with DPC's deliberate efforts to force me to do my job improperly.

Prior to working for Duke I was a substitute teacher for the York School District Number One in York, S.C., teaching grades nine through twelve. Before that, I was a graduate student at Vanderbilt University, from 1975 to December 1976. Prior to that, in 1975 I received a BA degree in Biblical Literature and Language from Gardner-Webb College in Boiling Springs, North Carolina.

I held several jobs with Duke at the Catawba plant. From March 1977 to approximately December 1977 I was a concrete pourer; from December 1977 to about March 1978 I was a concrete prepour runner, helping to coordinate the pouring of concrete by dealing with the paperwork; from March 1978 to about May or June 1978 I was secretary of the Utility Department office. Finally, about

May or June 1978 I was promoted to Electrical Quality Control Inspector, where I remained for nine months until I quit in mid-March 1979.

The reason I wanted to be a Quality Control Inspector was that in the approximately fifteen months that I had been working in the Utility Department I had seen that many things were not done the right way. However, during the course of my QC Inspector job I found out that this was not the case. I observed severe deficiencies in the way the QC program operated. That is, I observed problems regarding Design Control, conflicting policies regarding Non-conforming Item Reports (NCI's), and a general QC/QA breakdown, as illustrated below.

Before I was actually certified to inspect work on my own I had about four or four and a half months of on-the-job training, from about July 1978 to about November 1978. I received three or four half days of classroom instruction in which we went through inspection procedures and were instructed as to the specific points we had to verify in order to approve the particular item we were inspecting. We were given a list of different procedures for different items we inspected and we were told that that list was to be our "Bible" for performing inspections. Also, I learned what I was supposed to do by accompanying various inspectors and watching them do their jobs.

Electrical QC Inspectors were responsible for inspecting cable tray hangers, cable tray supports, cable trays, and cable

pulls in certain areas of the plant, notably the Reactor Building One Pipechase and several areas of the Auxiliary Building.

During my training time we had to verify work so that the work could proceed, for example be painted, but we did not have to sign off on anything -- nothing had to be documented. If we found that some item of work, for example anchor bolts on a uni-strut in the Auxiliary Building, was not done right -- if it was not done according to blueprint -- we went to the craft supervisor and told him about it, that the bolts were not right or they were in the wrong place, and told him to fix it. Generally, craft would fix it; sometimes we had to go back a second time and tell them again. But these errors were not documented.

During my QC training period, from about July 1978 to about November 1978, I did not see anyone documenting inspections of unistrut installations, in the sense that no one hung inspection tags on them or signed off on them. It was my understanding that this was just the way the system was set up. Although we had specific procedures to follow for each inspection we did, to my knowledge those procedures did not have a form for documenting the results of the inspections. If there were forms, we were not using them at the time. The one exception to this was for cable pulling verification; we did sign off on those inspections.

If we found a construction deficiency during our initial inspection, there were several ways available to document it.

We could write an R-2A Variation Notice; an M40-C (a minor deficiency report), or a Q-1A Non-conforming Item Report (NCI). However, the decision as to which of these we would use -- or if we would document a deficiency at all -- depended upon the then prevailing policy of any of our supervisors in QC - whomever had the "last word" at the time. Those supervisors were: Larry Davison, head of QC; Tommy Barron, Mechanical QC Engineer; Dick Hannay, my immediate supervisor; Jim Allgood, QC Electrical Engineer. To my understanding, based on my experiences in QC, there really was no clear policy as to which form, if any, we were to use in any given instance. It seemed like the supervisors were always changing their minds as far as how they wanted to document deficiencies or if they wanted to document them at all.

At one point, for one day only, in December or January 1979 (on the day of Tommy Barron's lecture, discussed below), I thought I had a real clear understanding of when we were supposed to use the NCI form and when we were to use the M40-C, although I never was given a clear understanding of when to use the Variation Notice. But since Duke's policies on documentation arbitrarily changed from day to day, the clear understanding I thought I had one day did not hold true for the next day. For example, on one occasion in January or February 1979 we - my partner Johnny Byers and I - were called to inspect twenty-seven cable tray hangers. We found that seven of them were not installed according to print; the most common error being seismic bracing running in the wrong direc-

tion or missing entirely. The very day before, Tommy Barron lectured us (all the QC Inspectors) on how to use the NCI report* and told us to use that form to report deficiencies.** So, in this instance we told our supervisor, Dick Hannay, about the seven errors and told him we intended to document the problems on NCI's as we had been instructed. However, we were told in no uncertain terms by either Jim Allgood or Dick Hannay or both not to use the NCI's; in other words, now we were being told not to do the job in the way that Tommy Barron had told us to the day before. Instead, Dick Hannay talked to Cecil Cox, the steelrigging foreman, and the next day Cox or his crew corrected errors on the spot. Dick Hannay was alarmed that there were seven hangers that we could NCI but he did not want us to write that many NCI's because it would not look good for him or the steel people. He was concerned because Larry Davison disapproved of writing a lot of NCI's.

All of us knew from experience that Davison's attitude regarding NCI's was that he was generally against writing them.

* My understanding from Tommy Barron's lecture as to why we were given this lecture was that Duke's attitude or the attitude of QC was that we had not been documenting deficiencies well enough in the past and that the documentation was not as good as it should be. Barron stressed better documentation. However, it was made clear to us that the main reason, if not the only reason, for documentation was for the benefit of the NRC, not for Duke.

** We were told, though, that the only time we could use an NCI was when we found a deficiency during a preplanned inspection. In other words, we could not red-tag a deficient item unless we were called by craft to inspect.

Instead, he encouraged us to get the deficiency resolved without documentation. Davison reserved writing NCI's usually for very serious deficiencies; i.e., only if the deficiency could not be remedied quickly, quietly, and easily would he not usually override the NCI documenting it, if written. So far as I know, no documentation of the seven cable hanger errors exists to show they were initially installed improperly because neither my partner, Johnny Byers, nor I wrote them up and I feel sure that no one else did because that was our area of responsibility.

To my knowledge, the prevailing attitude was that if the NRC did not require it, we would not have to document deficiencies. It was our feeling that Duke's attitude was that if Duke could get away with it they would just as soon not document the problems. Either Jim Allgood or Dick Hannay told us, the QC Inspectors, that every time we wrote an NCI that meant at least \$700.00 in expense for Duke -- in paperwork shuffling and people's time.

The policy of preplanned inspections was very clear. We had to have permission from craft supervision to inspect their work before we had a right to non-conform something. In fact, craft got rather "bent out of shape" because some of us were inspecting before they called for us and we were finding things wrong. Our QC supervisors came down on us and told us not to inspect anything until we were called by craft to do so.

This, of course, presented problems when on a few occasions we were just walking through the plant and spotted construction deficiencies. For example, in Unit 2 Auxiliary Building 560 elevation we found cable tray hangers which were not seismically braced

according to the blueprint. They already had an inspection tag hanging on them from another inspector (Bill Heffner) who had inspected and approved them as being done according to print. We just happened to notice that they were wrong; there were two hangers and one was physically in the way of where a cable tray was supposed to run. We told the approving inspector about it and he promptly removed the approval tag. As I recollect, he told the foreman it would have to be put in the proper place. To my knowledge, this deficiency was not documented, although I believe an NCI could have been written up. Because of the contradictory policy on writing NCI's, I believe that if I had tried to write an NCI chances were good that I would have been stopped. This problem of having to fight for NCI's was very discouraging; after a while we just stopped writing them.

There is yet another example of this situation. This one took place in the cable room directly below the control room for Units 1 and 2. We were inspecting the grid system that supports the cable tray under the cable room and we were finding a lot of deficient work -- work that was nowhere near being right; basically unistrut and cable tray hangers put in the wrong places.

Bobby Land, electricians' foreman, had called us to inspect, meaning that the work should have been completed properly. Land told us to mark whatever we found that was wrong (we tied yellow ribbon to those items). We found literally dozens of problems;

the cable tray room was filled with yellow ribbons and when Land and one of his over-superintendants, Max Davis, came in and saw it they both got very upset. All their mistakes were marked by yellow ribbons for everyone to see. They promptly fixed the errors and removed the ribbons. No documentation of these mistakes or the corrections was made. As far as QA documentation is concerned it would appear that the work was done right initially. Sometimes, the work was not done right the second time either, still it would not be documented as a problem.

In general, we were encouraged by our supervisors not to write NCI's; we were told to tell the craft supervisor about the problem and see if we could get him to fix it -- without documenting it. To my knowledge, most of the Electrical QC Inspectors handled discrepancies in this way. This was exactly the opposite of what was written in our procedures "Bible."

There were also problems with Design Control. That is, blueprints were changed to reflect construction errors. The result of this is that the prints reflect the "as-built" condition of the plant instead of the plant "as-built" reflecting the blueprint. In other words, construction errors that were not physically corrected were "corrected" by revising the prints. Construction errors were reflected in revised blueprints to appear as approved "design changes" made prior to construction, not after the fact to cover up the errors - the nonconforming items.

To my understanding, the correct and most efficient procedure to follow when we found a nonconforming item that could not be fixed easily by craft was to write an NCI to document the problem and let Design Engineering and Technical Support handle the decision. But, the common practice was that NCI's would not be written. Design Engineering would write up a Design Change and revise the print without an NCI documenting the mistake. So, there would be no evidence that a mistake had been made at all. It would appear that the mistake was, in fact, not a mistake but proper according to the revised print. In some instances Variation Notices (R-2's) were written and were reflected in the print, but this would not necessarily indicate a construction error -- just a variation. In other instances, the deficiency was merely noted but not documented in any formal way and the print was revised to accommodate the error.

The most typical example, in my experience, of prints being changed without NCI documentation happened in the Reactor Building Number One Pipechase. The prints called for all cable tray hangers in this area to be seismically braced according to a specific configuration and a specific direction according to degrees. What I found, during my inspections, was that in a lot of cases (involving Cecil Cox's crew) the seismic bracing was inconsistent with the blueprints -- it was installed in the opposite direction or perhaps ninety degrees off from the direction called for by the prints. We told Technical Support about the problem (and were told later that

they contacted Design Engineering). In most of these cases, Design Engineering changed the prints to reflect the bracing as installed, although no NCI's were written documenting the errors. Since our inspections were done by comparing the work to the print, when we were given this new print -- the one revised to reflect the construction foul-up -- we had no choice but to inspect by this print. Therefore, we were now approving undocumented construction errors that had been legitimized by a revised print.

Another example of this situation occurred in the Auxiliary Building. Again, the seismic bracing on hangers I inspected was run in the wrong direction from what the print called for. Here, too, the print was revised to reflect that as-built condition without NCI's being written up.

While we thought it was a very serious matter, the QC Inspectors had a running joke that Duke will build the plant and then draw the blueprints to reflect how it was built.

There were numerous incidents in the Cable Room also where, although we found construction errors -- items installed in the wrong place, seismic bracing again installed in the wrong direction -- no NCI's were written, there was no official documentation and yet the prints were revised to "correct" the construction foul-ups.

All in all, I would say that prints were revised in this way -- without writing NCI's -- in approximately 25% of the cases where I found construction errors.

In addition to these problems, there were others that I

encountered before I became a QC Inspector -- ones that add to the contention of an overall QA breakdown. For instance, in early 1978 when I was a prepour runner, I witnessed concrete for the containment in Reactor Building Number One being poured in very heavy rain. There were several inches of water standing on top of the concrete that had been poured into the forms. I saw no rain protection and no pump to remove the water from the concrete. More concrete was being poured directly on top of the water and concrete already in the form. (I was troubled by this because I know that if you get too much water in the concrete it jeopardizes the integrity of the concrete -- it won't hold up. I know this because when I worked on the utility crew I worked with concrete at the point where inspections were made on it and learned from the concrete inspectors what they check for.)

Even though test cylinders were made of the concrete that was being poured, these cylinders did not reflect the actual condition of the concrete being used in Reactor Building Number One. This was so because the test cylinders were protected from the rain, whereas the concrete actually poured in the forms for the reactor wall was not protected. The cylinders would be tested for a deficiency and unless they showed one, the concrete that had actually been poured would not be tested. So, in this case, there really were no test cylinders accurately duplicating the concrete used in pour for the section of the Reactor Building wall I witnessed.

In another instance, I witnessed the waiver of QA requirements. Initially, QA was keeping construction from pouring concrete, due to some technical reason of which I was not aware. This took place

in either the Auxiliary Building or Reactor Building Number One. The pour was held up for several hours and then QA said they would waive the requirements and construction went ahead with the pour.

More examples of this QA breakdown occurred while I was an Electrical QC Inspector. In one instance, when I was in the Reactor Control Room I saw water dripping from the ceiling onto and into the control boards. The boards, which were getting soaking wet, were replete with dials, wiring, and other equipment. As far as I know, this was going on for several hours. We, my partner Johnny Byers and I, informed the control board inspector, Terry Coleman, of the situation. He looked at it and promptly wrote an NCI and red-tagged the area. The cause of the leak, as I understood it, was that the concrete on top of the control room had not been sealed and because there had been a lot of rain, water collected on top of the concrete roof and seeped through to the control room. The NCI was resolved by placing space heaters in the area of the control boards and also by using hairdryer-type instruments to dry out some of the wire ends. So far as I saw, there was no effort made to protect the control boards from the pouring water up until they pumped the water off the roof.

On another occasion, when I was inspecting cable pulls I observed improper storage of electrical cables. As inspector, one of my duties was to verify that when cable was pulled the excess wire was hung up out of the way so as to protect it from being walked on or from lying in water, if any was on the floor. If it was not protected in this way I could not sign the cable off

as being pulled correctly. But, once we signed off on it and left the area there was no telling what might happen to that cable; a walk board might be placed on it, subjecting it to great stress, or it might be cut down and left on the floor. When we found cable ends that were not properly protected we informed the craft foreman and he usually corrected it. We never documented the incidents. We did not write up NCI's because, again, we were discouraged from doing so and especially because we knew that Larry Davison and Jim Allgood considered unprotected cable ends a minor thing and something we should resolve without the expense and paperwork of an NCI.

Still another common problem was low morale and discontent, stemming from a great deal of company pressure put on craft to meet construction schedules. The result that I saw come out of this was craft and QC being pitted against each other. When I was pre-pour runner I saw a great deal of pressure put on the Welding Inspectors by the general foreman. The prevalent attitude among the foremen seemed to be that they did not really care whether the weld got inspected; it was going to be covered up in concrete, nobody would ever see it or know the difference as to whether it was correct or not. All the foremen were interested in was having the weld signed off so that they could get on with pouring concrete to meet their work schedule.

As a QC Inspector I felt pressure not only from my supervisors but also from craft not to document construction errors. Craft did not want us to write up NCI's because it made them look bad; QC supervision did not want NCI's written because it would show

that there were lots of construction error problems. Once the errors were documented they became a permanent record and could not be swept under the rug or altered.

In addition to all these problems was the problem of defective scaffolding; i.e. shaky scaffolding that we had to use in the Auxiliary Building on, I believe, 522 and 540 elevations. During the course of my job as QC Inspector it was, at times, necessary for me to be ten, fifteen, or twenty feet up on a scaffold in order to check the torque of a nut or bolt -- taking measurements to a fraction of an inch -- or to check for a vis-o.k. on a weld and the inspector's initials. When my feet and the scaffold I was on were swinging under me my ability to do my work was severely impaired. I would not sign off on the work I was inspecting unless I could see it clearly enough to know whether it was done properly or not. If I could not see it accurately I would get a ladder, shore up the scaffold, or do whatever I had to do to verify the item. I would not just guess that the work was done properly. While I can vouch for what I did in these situations, I cannot say that everyone else did the same.

All in all, it seems to me, from my work experience at Catawba -- fifteen months as a craft worker and nine months as a QC Inspector -- and as the above examples illustrate, that there was a pattern of systematic deficiencies at Catawba.

As my awareness about the lax way in which the plant was being built heightened, my growing concerns over the safety of the plant deepened. I found it more and more difficult to go along with the haphazard way in which Duke was building Catawba in

general, and the fact that the QA/QC program was not fulfilling its purpose in particular. Finally, in March 1979 I reached the point where my conscience would not allow me to be associated with the Catawba project anymore. On March 15, 1979 I told my supervisor, Dick Hannay, that March 16, 1979 would be my last day on the job. Mr. Hannay was not surprised at all because he knew how I felt. My decision to leave was purely a decision of conscience.

Although I discussed my concerns with Dick Hannay and others at the plant I did not contact the NRC. In general, I felt that it was a waste of time to talk to the NRC; that the NRC was not going to do anything about my concerns except "whitewash" them.

Based on how I had seen the NRC operate at Catawba, particularly after I became certified as a QC Inspector in 1979, my opinion was that they were basically a rubber stamp for the industry. That is, the NRC was at Catawba just to make sure the paperwork looked good, but not to ensure that the plant was built to meet quality standards.

One example of this occurred in the winter of 1979 when a visiting NRC inspector came on-site. I saw him in the QC shack where he inspected mainly blueprints and some other paperwork. I did not see him out in the field inspecting work. This inspector visited my group - Electrical QC Inspectors - twice that I know of. On neither of those occasions did I see him dealing with my group out in the field. He just stayed in the QC shack inspecting nothing more than paperwork. During the entire two years that I worked at Catawba I saw an NRC inspector walking around out in the field only about ten times.

Because I felt the NRC was simply "going through the motions" of inspecting at Catawba, I had no confidence that they would seriously investigate my concerns.

The only contact I have had with the NRC was: (1) when I made a limited appearance at ASLB hearings in Charlotte, NC in early July of 1979 in connection with the issue of Oconee-McGuire transshipment of spent fuel; and (2) when of the NRC called me in the fall of 1982. That was my last contact with the NRC until now.

In or about July 1981, two and one-half years after I quit my job with DPC, I joined the Palmetto Alliance. (This was about the time it became an intervenor in the Catawba licensing proceedings.) I became a member because I shared the Alliance's concerns about the dangers of nuclear technology, in general and the unsafe construction of Catawba, in particular. Since I knew that Catawba was being built not in accordance with safe construction procedures, i.e. that the methods used did not assure the quality and safety of the plant, I felt that the plant would be a public health and safety hazard and should not be licensed because of the way it is being built. I felt that by working with and through Palmetto Alliance we could show the Licensing Board how severe and widespread the safety problems at the plant really are.

WILLIAM RONALD MC AFEE

Signed and sworn to before
me this _____ day of November, 1979.

NOTARY