



Canonbury Villas, London N1 2PN

Green Action

*Suite 103, 22-75 Tanaka Sekiden-cho, Sakyo-ku, Kyoto 606-8203 Japan
Tel: 81-75-701-7223 Fax: 81-75-702-1952 email: amsmith@gol.com*

Laurence Williams
Director of Nuclear Safety and
HM Chief Inspector of Nuclear Installations
St Peter's House
Stanley Precinct
Bootle
L20 3LZ

11 April 2000

Dear Chief Inspector,

We are writing to you in advance of British Nuclear Fuel's (BNFL's) report to you on the adoption of the Nuclear Installations Inspectorate (NII) recommendations contained in the NII report entitled "An investigation into the falsification of pellet diameter data in the MOX Demonstration Facility at the BNFL Sellafield site and the effect of this on the status of MOX fuel in use", UK Nuclear Installations Inspectorate, February 18th 2000.

We have spent considerable time during the past weeks and months collecting and analysing data and information relating to this affair, not only in the UK but also in Switzerland, Germany and Japan. As a result of the information we have been able to obtain during this period we have become increasingly concerned by the conduct of the NII's investigation. A more detailed critique of your investigation is attached below. Our concerns are summarised in this letter.

We believe that the NII investigation into the falsification of MOX Quality control data by BNFL is seriously flawed. Specifically, the original scope of the investigation was too limited, although the impression given by the NII upon release of its report on February 18th was that it was "thorough". For example:

- (1) German and Swiss quality control data was not investigated;
- (2) the role of, and process involved in, the automated pellet check was misunderstood by the NII;
- (3) the NII's own role in relation to assuring the safety of the fuel appears confused;

(4) the NII has failed to recognise the production difficulties that BNFL experienced throughout the operation of the MOX Demonstration Facility (MDF) in making MOX to meet its customers' specifications.

These limitations mean that the NII has failed to identify either the full scope of the quality control difficulties experienced by BNFL or the fundamental motivations for the manipulation, adjustment and falsification of quality control measurements in the MDF.

This in turn means that the NII report is inadequate to guarantee the safety of the fuel in use, or to demonstrate that its recommended "corrective actions" are sufficient to reassure its customers, the regulators, or the public.

The NII, by assuming the role of assuring the safety of the fuel for a foreign client has gone beyond its remit. The NII has no authority whatsoever to assure the safety of fuel destined for use in overseas reactors.

Due to the narrow scope of the NII investigation, it failed to ask fundamental questions about the actual MOX production technology applied by BNFL. If it had done so it would have perhaps understood why by-passing, adjusting, manipulating and/or falsifying quality control checks was a necessary practice when undertaking MOX fuel fabrication at Sellafield. There is ample evidence now available to demonstrate that BNFL could not meet its customers original quality control requirements, and that copying of quality control data (the only type of falsification identified by the NII) was only one means of overcoming this fundamental problem.

BNFL is has proved incapable of producing MOX fuel to customer specifications, through a combination of inherent problem of powder technologies (which BNFL has clearly not perfected), poor technology, and quality control (QC) standards which it has proved unable to meet. We draw your attention to a recent report commissioned by the ministry of environment of the government of Lower Saxony. This report, by the TUEV agency, which examines MOX production and QC standards at Sellafield, is now being considered by the Lower Saxony Government, and no doubt the Federal Ministry of Environment in Berlin. It discloses that since 1994 deficiencies in production and QC standards at the MDF have been experienced by Siemens, the German fuel vendor, and TUEV. In December 1994, TUEV visited Sellafield and concluded that quality control and production were not sufficiently independent from each other. TUEV later approved a reduction in the quality control standard for MOX pellet diameter by 30%, because too many pellets were being rejected by the test originally set. As early as 1997 Siemens detected irregularities in the QC data for MOX fuel delivered to Switzerland and Germany.

As you will now know, MOX fuel delivered to Germany has subsequently been found to contain fuel with falsified QC data. It was removed from the Unterweser reactor earlier this year.

Similarly, a visit by Mitsubishi Heavy Industries (MHI) to the MDF in 1995 led them to question the ability of BNFL to make MOX fuel pellets that met the specification. This information was made public in Japan on 1 March, in the interim report of BNFL's MOX customer Kansai Electric (KEPCO). However this key information does not appear to have led the NII to question the limitations of the analysis it published in February.

We have noted with concern your investigation into Japanese MOX fuel, including a safety assessment that relied almost exclusively on information from BNFL. Critical parts of this information are now demonstrably incorrect (in particular BNFL's method of automated pellet measurement, which does not function as the described in the report).

In addition, it appears to us that Kansai Electric has received special treatment, beyond the statutory authority of the NII. Your report on the falsification of data on Japanese MOX fuel stands in stark contrast to your failure to investigate quality control on German and Swiss MOX fuel and the implications for safety. In NII's own words the latter is a matter between BNFL and its customers. Not in the case of Japan it seems. This has had two important consequences: (i) insufficient attention has been paid to the German and Swiss data and the safety implications; (ii) Japan has been wrongly reassured the fuel is safe, when the NII has neither the expertise or legal responsibility to determine this.

No assessment has been made by the NII of the quality control (QC) standards applied to German and Swiss MOX fuel, despite the fact that most MOX produced by BNFL at the MOX Demonstration Facility has been for these countries, rather than for Japan. We note that the investigation was unable to identify the motives for falsification, and yet it did not look beyond the narrow area of pellet diameter measurement. An investigation of other QC checks, would have revealed further levels of falsification, including density measurements, and faults in QC certificates for enrichment and nitrogen content.

We note that the Kansai Electric Interim Report adds yet further key information that is not even mentioned in the NII report. This includes the information that the operating manual used by workers in the MDF deliberately de-emphasised the importance of the QC checks, in such a way that workers believed that the check was redundant. In particular the manual referred to the all-pellet diameter measurement as a "follow-up inspection". We note with concern that the NII has also confused its terms, referring to what was in fact a quality control inspection as an "over-inspection" and also implying that it was a redundant check.

We note with concern your active endorsement of the "automation" of the new Sellafield MOX plant, though you base this approval on a limited understanding of the QC checks to be applied, relying on BNFL assurances. As you may know, 12 of the 15

important QC checks to be conducted at the SMP will not be automated. The motive for falsification, which we believe is primarily driven by commercial considerations and production difficulties, not "the tedium of workers" or poor ergonomics, will exist as much in the SMP as it has done in the MDF.

We believe that the MOX fuel scandal that has embroiled BNFL these past seven months has exposed a fundamental failure of the regulatory system as it relates to the production of nuclear fuel in this country. In particular with MOX, this raises some very serious questions of reactor safety, which we believe your agency has failed to acknowledge. Instead you have relied upon safety assurances from BNFL, which is driven by a survival instinct rather than concern for public safety in both the UK and overseas.

We are convinced from the available evidence that your recommendations to BNFL, even if fully accepted, will not significantly improve the production standards of MOX fuel at Sellafield. Your recommendations will therefore not eliminate the need for BNFL to by-pass, manipulate, adjust and/or falsify vital quality control checks and/or data on MOX fuel if it is to meet its customers' specifications.

We remain unconvinced that the NII is either sufficiently independent, qualified enough, or determined enough to fully investigate this important matter. We believe that the scale of the problems of MOX production at Sellafield require an entirely new and transparent investigation. There may be a role for the NII, but the above factors, plus the statutory restrictions placed on you by law, may preclude this.

Finally we would like to express our dissatisfaction at the failure of the NII to provide credible, full answers to the many questions that have been put to you by us over the past six months. NII's replies to us have revealed a degree of misunderstanding and ignorance of basic facts that is quite staggering. Having to rely on the media for information about activities at a site that is supposed to be under investigation is deeply worrying in terms of nuclear safety in the UK. We include a new list of questions to you in the hope that you will seek to rectify this unfortunate state of affairs.

In addition to this letter please find enclosed the following:

"Critique of the NII report on BNFL's MOX Fuel Quality Control", by Greenpeace and Green Action, April 2000.

A series of further questions on the falsification of MOX fuel quality control data, and the NII's investigation on this matter;

A copy of the report, "An investigation into the problem of BNFL fabricated MOX fuel", Kansai Electric Report March 1st 2000, in Japanese;

A copy of the "Report on the safety of NPP Unterweser, incidents at BNFL in connection with the production of MOX fuel assemblies", TUEV, March 28 2000, report to the Lower Saxony Environment Ministry, in German.

Yours sincerely,

Dr Helen Wallace
Greenpeace UK

Aileen Mioko-Smith
Director, Green Action