

The SASSAFRAS AUDUBON SOCIETY
of LAWRENCE - GREENE - MONROE - BROWN -
MORGAN & OWEN COUNTIES
INDIANA

June 29, 1979

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

TO: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

RE: Public Service Indiana, Inc.
(Marble Hill Nuclear Generating Station,
Units 1 & 2

}
Docket Nos. STN 50-546
50-547

A REQUEST TO SUSPEND AND REVOKE CONSTRUCTION PERMIT AND TO REOPEN SAFETY HEARINGS
ON MARBLE HILL NUCLEAR GENERATING STATION

The Sassafras Audubon Society petitions the Director of Nuclear Reactor Regulation pursuant to 10 CFR 2.206 of the Nuclear Regulatory Commission's Regulations to suspend and revoke the construction license for Marble Hill Nuclear Generating Station, Units 1 & 2, and reopen safety hearings on said facility.

Major environmental, health, and safety concerns relative to the construction and operation of Marble Hill have developed since issuance of the construction license. These concerns have either not been addressed, or addressed superficially, at previous hearings, by the Final Environmental Impact Statement, the Preliminary Safety Analysis Report, the Environmental Report-Operating License Stage, and the Final Safety Analysis Report.

According to the decision of the U.S. Court of Appeals, District of Columbia, regarding section 186(a) of the Atomic Energy Act and section 50.100 of 10 CFR in Ft. Pierce Utilities v. United States of America and the Nuclear Regulatory Commission, newly revealed environmental, health, and safety problems constitute valid grounds for a post-construction licensing review "under evolving licensing standards, rather than under the standards applicable when the license was issued", and for asking the Nuclear Regulatory Commission to suspend and revoke a construction permit.

We seek to be heard at a meaningful point in the licensing process¹. Marble Hill is in an early stage of construction, and a review of concerns is still meaningful as to whether continued construction is justified. We therefore ask for immediate suspension of the construction license while a Hearing is being arranged. Delaying consideration of public concerns, while permitting construction to continue "around the clock", 24 hours-a-day, 7 days-a-week, to a "point of no return" would constitute justice denied.

¹
Appendix 1

Add: H Denton

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We believe the following issues justify a Hearing:

- ..Quality-controlled construction of Marble Hill
- ..Marble Hill's potential for a Class 9 accident
- ..Nuclear power as an experimental & developing technology
- ..Marble Hill as a High Level Waste (HLW) storage site (spent fuel)
- ..Decontamination and Decommissioning of Marble Hill
- ..Marble Hill and Radon
- ..Marble Hill and the ALARA principle
- ..Conservation "energy" and Solar Energy as viable alternatives

These issues are discussed briefly in the following pages in support of our request for a Hearing.

NEGLIGENT ENGINEERING, CONSTRUCTION, AND QUALITY ASSURANCE FOR MARBLE HILL?

The Risk Assessment Review Group on Reactor Safety, (Dr. H.W. Lewis, Chairman) noted on page 28 of their Report (September 1978) that "safety with respect to normal accident sequences would lie in redundancy, defense-in-depth, and meticulous engineering, construction, and quality assurance." (emphasis added)

Allegations have been made by workers at Marble Hill within the past year of poor concrete construction, as well as improper repair of faulty concrete; of defective weld cover-ups; of excessive work-schedule demands; of ineffective and insufficient inspection systems; etc.

Recently former workers have signed affidavits concerning personal knowledge of poor concrete construction and repair practices. The public learned as a consequence that NRC inspectors were aware of "above average" honeycombing in the concrete, and had not been satisfied with the quality testing system of welds.

Senator Birch Bayh of Indiana and Senator Wendell H. Ford of Kentucky secured an investigation of Marble Hill's construction, with Senator Ford requesting additionally that work be halted while the investigation was in progress. Representative H. Joel Deakard of Evansville, Indiana is also taking an active part in the investigation.

The investigation in its early phase resulted in identification of 517 honeycombed areas with 170 categorized as not properly repaired. The NRC is beginning a program to test the integrity of the concrete that has been poured through ultrasonic testing, compression-testing, etc. The motivation of the contractor in not making proper repairs will be part of the investigation.

The NRC is giving PSI a chance to implement an adequate quality control program with PSI inspecting the contractor's inspections. Concrete work has been permitted to continue in non-safety areas. If further weaknesses in concrete construction are identified as the result of the continuing investigation, all concrete work

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will be stopped and Rep. Deckard, as well as others, will ask the NRC to revoke PSI's construction permit for Marble Hill.

Why did it require worker affidavits and citizen action to secure an improved quality-control program for construction of Marble Hill? The public's confidence in the regulatory process has been further undermined.

PSI's most apparent concern has not been quality-controlled construction but the meeting of "construction milestones." A recent milestone, filing of the General Information portion of the application for Licenses (Operator's), the Environmental Report-Operating License Stage, and the Final Safety Analysis Report with the Nuclear Regulatory Commission on June 1, 1979, came as a surprise.

The Caseload Forecast Panel (NRC), after their February 27-28 site visit to Marble Hill, had advised:

"We evaluated the applicant's present status of construction and used that information to predict a fuel load date based on our experience with construction time at other nuclear stations. We observed that, although they were meeting their schedule during installation of structural steel and concrete, it will be difficult to maintain this accelerated schedule during installation of piping, hangers, and electrical cables. As a result, the Caseload Forecast Panel arrived at a more conservative estimate for a nominal fuel load date at Marble Hill of July 1983. In addition, we advised the applicant not to submit the Final Safety Analysis Report until after they set the reactor pressure vessel in place. We stated that the Caseload Forecast Panel will re-evaluate the Marble Hill construction schedule at that time." (emphasis added)

NRC officials met with PSI officials on May 3, 1979 to reconsider the matter, and, we assume, got the go-ahead to submit their final reports ahead of what had ^{been} previously advised. The Reports seemingly had to be in by that date to give the NRC the 35 months that might be needed to complete the Operating License Review, and at the same time maintain PSI's "ordained" target date of 4-1-82 for Fuel Load.

The applicant (PSI) has stated that they plan to set the reactor pressure vessel in place in August 1979.

PSI's accelerated schedule is particularly disturbing in the context of the major reassessment taking place today of all phases of the nuclear fuel cycle with regard to public health and safety and the true cost of nuclear power.

Is the "full speed ahead" approach of PSI's construction schedule calculated to place Marble Hill "beyond" (grandfather-clause argument) recommendations and new requirements expected as "fall-out" from current studies and investigations (e.g. Kemery Three-Mile Island Committee, House and Senate Three-Mile Island Committee investigations, Lesson-Learned Task Force (NRC), Interagency Committee on Ionizing Radiation, etc, etc,)?

The projected demand for electrical power in Indiana by October 1982 scarcely

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justifies such haste. Conservation "energy" programs are expected to offset actual growth in demand.

MARBLE HILL'S POTENTIAL FOR A CLASS 9 ACCIDENT?

Experience gained from a multitude of "REACTOR OPERATING EXPERIENCES" (Three-Mile Island an acute example) and the more or less normal operation and aging of reactors, has resulted in an impressive list of unresolved safety issues.

The Risk Assessment Review Group Report showed the need for the NRC to assess and revalidate existing regulatory requirements, to evaluate new designs, etc., to deal with generic safety issues.

Save The Valley-Save Marble Hill, Inc. (STV), after the Risk Assessment Review Group issued their Report (NUREG/CR-0400), requested that safety hearings be reopened for the Marble Hill Nuclear Generating Station on grounds that the Report concluded that WASH-1400 "does not adequately indicate the full extent of the consequences of reactor accidents and does not sufficiently emphasize the uncertainties involved in the calculation of their probability. It has therefore lent itself to misuse in the discussion of reactor risk."

WASH-1400 was a fundamental determinant for the Nuclear Regulatory Commission, Atomic Safety & Licensing Board, in granting a construction license to Public Service Indiana, and is cited on pages 7-2 and 7-3 of the FEIS on Marble Hill as an authoritative source regarding reactor safety.

The Risk Assessment Review Group was particularly concerned whether WASH-1400 properly accounted for COMMON CAUSE FAILURES which can bridge event-trees and cause simultaneous uncorrelated breakdown in different systems.

The accident at Three-Mile Island was a convincing demonstration that what had previously been considered a very low probability accident, was, perhaps, not that low.

Marble Hill must be reassessed in terms of its potential for a Class 9 accident as well as for an accident(s) that would result in significant release of radiation into the environment, whatever the class of severity. This, in itself, warrants the reopening of safety hearings on Marble Hill.

We have attempted a "review" of the Final Safety Analysis Report for Marble Hill to determine how PSI has met Category 2, 3, and 4 items and other recently raised safety issues, but have concluded that the public needs expert help in such an evaluation. A public hearing would provide the forum for questions and answers on these subjects.

NUCLEAR POWER---AN EXPERIMENTAL & DEVELOPING TECHNOLOGY

Recent Memoranda issued by the NRC to the Marble Hill Service List raise questions on safety issues to which we seek answers:

Memorandum for Board Notification (both PWR's and BWR's) - Non-safety-
Grade Equipment to Mitigate Transients (BN-79-12) (rec. April 4, 1979)

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This notification was for the purpose of making Boards aware of a staff assessment regarding the current practice of placing reliance on nonsafety grade equipment for the mitigation of the severity of anticipated operational occurrences. "...of no immediate safety significance but could lead to a change in staff practice in the future." Has staff practice changed, and if so, how will it effect Marble Hill? Will Marble Hill be qualified to seismic Category I or IEEE-279 requirements?

Memorandum on Board Notification - Pipe Support Base Plate Design, Sept. 28, 1978, (received April 5, 1979)

Considered a generic item for all operating plants. Safety significance: Depending on equipment layout, improperly designed or installed anchor supports could result in loss of support function in some cases; and high stressing of piping systems during a seismic event or during a significant flow transient. Recommended that this problem be addressed on all CP and OL reviews. Will changes be recommended for Marble Hill?

Memorandum on Fire Protection Research Test, Sept. 28, 1978. Rec. April 5, 1979.

As a result of the fire at Browns Ferry in 1975, the NRC imposed a strict control over fire ignition sources and took under review fire suppression systems for strengthening fire protection in nuclear plants. On September 15, 1978, a fire test of a full-scale vertical cable tray array was made by Underwriters Laboratory to demonstrate effectiveness of area sprinklers and mineral wool blanket type cable tray fire barriers in preventing damage to cables as result of an exposure fire.

Result: Fire damage in several trays of electrical cables indicated that fire protection features used in test would not be acceptable and that modification of the NRC staff's fire protection criteria might be necessary. Have the fire criteria been modified, and if so, how might this affect the fire protection system designed for Marble Hill?

Memorandum for Board Notification - Recent Semiscale Experiment S-AS-6, Sept. 22, 1978. Rec. April 5, 1979.

Experiment was intended to model an integral blowdown-refill-reflood scenario for a double-ended cold-leg break. Some of the results were unanticipated. Nearly complete downcomer voiding occurred after downcomer fill. More information sought on atypicality issue and code predictability issue. Follow-up report promised.

Memorandum on Post-LCA Hydrogen Production from Materials Inside Containment, October 17, 1978. Rec. March 5, 1979.

A substantial amount of organic materials is used in protective coating systems, including those over zinc-based primer paints inside PWR and BWR containments. When exposed to LCA environments (high temperature, chemical, and radiation fields) these

organic materials undergo a process of decomposition to form hydrogen and hydrocarbons. The hydrogen which can be thus generated represents roughly a 10% increase in the hydrogen generated from all sources previously considered.

This matter not explicitly considered in reviews until recently. Both a short and long-term research program needed.

Memorandum on Design of Refueling Water Storage Tank (RWST), March 29, 1979.
Rec. April 3, 1979.

The current standard review plan for ECOS does not specify requirements for particular sizing allowances in the RWST beyond stating that "adequate" volume should exist. The deficiency identified for the Seabrook plant was a serious one, for it could have resulted in the multistage safety injection and charging pumps losing suction and becoming inoperative following switch-over from the injection to recirculating operating mode.

An assessment of this deficiency on plants in the CP or OL stage of licensing is underway.

Report - Summary of Operating Experience with Recirculating Steam Generators,
March 2, 1979.

The NRC has recently identified steam generator degradation as an Unresolved Safety Issue deserving the highest priority for resolution.

The NRC decided recently to order nuclear reactors built by the Westinghouse Electric Corporation and Combustion Engineering Co. Inc. (who are building Marble Hill's) closed down in 90 days so that cracks in the steam generator nozzles can be inspected. Inspection of 13 Westinghouse reactors in May showed that 6 had such cracks and required repairs.

FR Fuel Assembly Mechanical Response Analysis, November 4, 1977. Rec. September 13, 1978.

The results of analyses performed for the NRC staff by a consultant indicate that the impact force on fuel assembly spacer grids, caused by asymmetric loads during blowdown following a loss-of-coolant accident, may be more sensitive to core plate motion than originally believed. Question raised about the margin to deformation of the fuel assembly grids. Evaluation continuing.

Investigation and Evaluation of Stress Corrosion Cracking in Piping of Light Water Reactors, March 23, 1979.

Report made by a new Pipe Crack Study Group. NRC undecided as to further action for licensing and operation of reactors.

Reliability of Emergency Onsite Diesel Generators, April 18, 1979.

Review of operating experience of the emergency onsite diesel generators at light water reactors (1969-1977) indicated "their reliability could be improved."

MARBLE HILL---A "LONG-TERM" HIGH LEVEL WASTE STORAGE SITE?

Spent fuel is a High Level Waste (HLW) and contains all the fission products (beta-gamma emitters) produced during reactor operation, and all heavy isotopes (alpha-emitters) built up by neutron irradiation that have not fissioned.

Spent fuel assemblies have a high heat generation rate, "appreciable" after decades of storage, and require thick and heavy shields for protection from their penetrating gamma and neutron radiation. The long-term build-up of alpha-emitting daughters in spent fuel represents a major long-term hazard, requires that spent fuel be isolated successfully from the environment for tens of thousands to millions of years.

In the last few years, with commercial away-from-reactor (AFR) spent fuel storage nearing capacity, the NRC permitted spent fuel to be stored onsite in ever-growing quantities through compaction and enlargement of storage pools.

THE NUCLEAR POWER INDUSTRY PERSISTS IN INSISTING (AS DOES PUBLIC SERVICE INDIANA) THAT THE SOLUTION OF THE SPENT REACTOR FUEL PROBLEM IS SIMPLY REPROCESSING, BLAMING THE FEDERAL GOVERNMENT FOR NOT MASTERING THE TECHNICAL, ECONOMIC, AND POLITICAL PROBLEMS INVOLVED!

A look at the problems associated with reprocessing makes the current administration's "backing-off" seem highly rational:

- ...Questions remain as to whether uranium fuel which has been exposed to extensive burn-up in nuclear reactors, and which has excessive quantities of fission products, can be enriched successfully and economically from the reclaimed range of 0.8% uranium 235 up to 3% uranium 235 necessary to fuel light water reactors (LWR).
- ...Contrary to the claims of the nuclear industry, reprocessing is not a waste management solution as the volume of radioactive wastes is increased (10-30%) with Pu recycle and the toxicity and heat output roughly comparable to no recycle.
- ...The technical and economic feasibility of large-scale solidification of high-level liquid radioactive wastes has not been determined. (about 0.6% of the nation's high level liquid radioactive waste has been solidified)
- ...No site for long term storage of HLW has been identified (the WIPP site can only be considered a candidate) and it could be decades before a full-scale Federal HLW Repository is realized.
- ...A reprocessing facility represents a much higher accident risk-potential to site area in terms of an earthquake or any accident, because it deals with the inventory of highly radioactive fission fragments from numerous reactors. West Valley experienced a series of excessive radioactive emissions as have other reprocessing facilities here and abroad.
-Private commercial ventures into nuclear fuel reprocessing at West Valley, N.Y. and Barnwell, S.C. have been setbacks. The Federal Government will have the "Herculeean undertaking" of "cleaning-up" West Valley, although the extent of the clean-up possible is unknown.

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...The owners of Barnwell (Barnwell was never completed) have been trying to sell it to the Federal Government for a number of years. GE-Morris (Illinois) never operated as a reprocessing facility but was used for spent fuel storage.

...The principal concern with reprocessing spent fuel is the management of plutonium---safeguarding the public from plutonium accidents, and safeguarding plutonium from the public and planned misuse.

The construction permit for Marble Hill authorizes the applicants to construct a spent fuel pool in accordance with the design specified in section 9.1 of the Preliminary Safety Analysis Report for a total capacity of one and two thirds cores of spent fuel, approximately 340 spent fuel assemblies.

THE FINAL SAFETY ANALYSIS REPORT (FSAR) FOR MARBLE HILL PROPOSES ENLARGEMENT OF SPENT FUEL CAPACITY FROM 340 TO 1050 SPENT FUEL ASSEMBLIES AND 10 DAMAGED ("FAILED") FUEL ASSEMBLIES.

Nearly a year ago, PSI announced before a regional press contingent its intention to store spent fuel assemblies on the Marble Hill Site for at least 10 years and for 20 years if necessary.

This public disclosure of intent by PSI was reported to the Atomic Safety & Licensing Board (NRC) on September 11, 1978, by Thomas M. Dattilo, attorney for STV, Marble Hill intervenors, who noted that the applicant "nowhere in the transcript or in its written testimony addressed the environmental effects of such long term storage on site." Dattilo also observed that it was unreasonable to assume that safety questions regarding the storage of spent fuel rods could be resolved satisfactorily before completion of construction of the proposed facility. STV specifically requested the Atomic Safety and Licensing Board:

"to reopen the safety portion of said hearings on the basis of new facts and evidence from which it is not reasonable at this time to determine that safety questions can be satisfactorily resolved before the latest date for completion of construction of the proposed Marble Hill facility."

The NRC staff replied that the NRC hearing board had no present jurisdiction over the Marble Hill proceeding, and that STV's concern was at best premature (based on an unspecified public announcement by applicants.) The NRC noted that "If in the future the Applicants desire to change the design of the spent fuel pool to increase materially the capacity to store spent fuel, authorization will have to be obtained in advance from the NRC. It is possible that the applicants might choose to make such a request as part of their request for operating licenses. Advance notice of NRC consideration of either request will be given to members of the public."

The Nuclear Regulatory Commission has specified no maximum period within the effective terms of the operating license for the storage of spent fuel elements in on-site fuel pools. For a number of pools whose alteration was approved, the increased storage capacity is enough to hold spent fuel from reactor operation for more than 10 years.

The potential exists for PSI to apply for and secure permission to increase storage capacity of spent fuel at Marble Hill still further during the life of the plant, and for Marble Hill to continue to serve as a high-level-waste storage site indefinitely after final shutdown of the reactor,

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Sufficient AFR spent fuel storage for the expanding nuclear industry is doubtful within Marble Hill's active lifetime, not only because the annual volume of spent fuel is expected to increase 5X present volume within the next two decades if the nuclear plants projected in the OL and OL stages come on line, but because of institutional and political problems that must be resolved in licensing AFR facilities. Citizen groups are committed to preventing further radioactive waste storage at West Valley and to close-down Barnwell, not open it to spent fuel storage!

A LONG-TERM SOLUTION OF DISPOSING OF RAD-WASTES IN A FEDERAL REPOSITORY CONTINUES ILLUSORY. Whatever optimism can be gleaned from the Interagency Review Group (IRG) Reports on Nuclear Waste Management is circumscribed by uncertainties. The IRG itself notes:

"there have been inadequate perceptions of the additional technological and scientific capabilities needed to develop an acceptable disposal capability" and that it is now recognized as a problem whose resolution will clearly require:

"an unprecedented extension of capabilities in rock mechanics, geochemistry, hydrogeology, and long-term predictions of seismicity, volcanism, and climate." (pages 2 and 3, Report to the President by the Interagency Review Group on Nuclear Waste Management, March 1979).

The IRG did not include an estimate of politically-imposed delays in the "Idealized Schedules" for predicting when the first waste disposal facility might be placed in operation. While difficult to estimate, politically-imposed delays could well be the most significant source of delay, because of the strength of public opinion regarding the ^{historical} irresponsibility of the Federal Government, the Nuclear Industry, and the NRC-DOE toward nuclear waste disposal.

The "official" viewpoint of the NRC toward spent fuel storage, that there are no significant safety or environmental consequences to the public from increasing the storage of spent fuel pools at individual reactor sites nor from the transportation of spent fuel to other repositories for longer-term storage, illustrates the attitude (there are no problems!) which has aroused public opposition to further expansion of nuclear power until progress has been made in the long-term isolation of rad-wastes.

Questions are being raised on corrosion effects that might occur with prolonged storage. Successful storage is predicated on high quality control standards, purity of storage pool water, maintenance of temperature below 50°C, etc. Are we to accept such quality control on faith?

What is the heart-of-the-matter? It is the decision of the U.S. District Court of Appeals for the District of Columbia, in the case involving the storage of spent fuel rods at the Vermont Yankee reactor in Vernon, Vermont and the Prairie Island facility near Red Wing, Minnesota (NECHP v. NRC), May 23, 1979 which says that the NRC must consider the possibility that the spent fuel may have to remain at the reactor site indefinitely since no safe method of waste disposal or off-site storage seems likely in the foreseeable future.

As Judge Tamm noted, the law "forbids reckless decisions to mortgage the future for the present, glibly assuring critics that technological advancement can be counted on to save us from the consequences of our decisions."

MARBLE HILL AND D&D

Light work is made of the Decontamination and Decommissioning (D&D) of Marble Hill in the final submissions for an operating license. PSI simply states:

...PSI and WPA are established electric utilities with diverse system loads and have reasonable assurance of obtaining operation, maintenance, and decommissioning costs over life of facility through sale of electric power.

PSI estimates decommissioning costs of Marble Hill at approximately 45 millions dollars per unit, which means that 3 million would have to be raised per year over a 30-year life, and 2 million per year over a 40-year life of the plant.

THIS SUMPTION OF D&D IS SIMPLY UNACCEPTABLE.

The NRC should require as a condition of licensing a detailed decommissioning plan plus detailed cost estimates and financial arrangements to assure that the plan would be implemented.

Assuming the technology to accomplish D&D is at hand, as we are assured that it is by the NRC, major uncertainties remain as to when decontamination, dismantling, and decommissioning of the megalithic, "hot" commercial reactors will be feasible in terms of possible health effects on workers (and numbers of workers needed), of possible contamination of the environment during the dismantling, and in terms of the sheer economic costs.

The IRG Report to the President (page 34) mentions that "As a general rule, unrestricted use of land should be the ultimate objective of D&D and institutional controls should not be relied upon after some period of time to provide long-term protection of people and the environment."

Will PSI opt for "immediate" or delayed dismantling? If delayed, for mothballing or entombment? For how long, and what type of surveillance?

The logistics of disposing of the vast amounts of material involved in a plant such as Marble Hill, a substantial portion of which may have to be stored in a Federal High Level Waste Repository "in perpetuity" should be faced before the applicant is given a license to operate the plant.

Dr. Clifford Smith, NRC, testifying before a Subcommittee on Government Operations, September 1977 (page 315, Nuclear Power Costs), minimized the costs of D&D as very, very small, less than 1% of the cost of power. Mr. Howard Morgan's (member of the Federal Power Commission, Kennedy Administration) comments on dismantling reactors which appeared in a Letter to the Editor of the International Herald Tribune, June 23, 1973, is offered as a contrasting and more conservative appraisal:

"But when a large portion of the structure is too "hot" to approach, let alone to touch, when dust from demolition or rainfall over it presents a spreading deadly hazard, when thousands of tons of radioactive metal and masonry, somehow have to be cut up into chunks of practical size for handling and then sealed away safely for many centuries, and when even the most skilled and experienced engineers don't know how to begin, then it becomes obvious that the burial costs of a dead power plant can equal or exceed the already alarming costs of its construction."

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The engineer referred to by Mr. Morgan, in particular, is Andre Cregut, Chief of Programs for managing obsolete French nuclear installations, who at age 50 decided to devote his remaining years to figuring out how to take the French Phenix (breeder) reactor apart properly. Mr. Cregut has also not found mothballing successful for only 10 years after the Marcoule G1 plutonium reactor was mothballed it was leaking radiation.

Mr. Morgan had observed previously to his fellow Commissioners that until a dis-used (long-term commercial) plant could be safely, efficiently, and economically scrapped, that the total cost of the plant to be amortized in the utility rate structure stood absolutely open-ended.

Judge Tamm's comment on the law forbidding "reckless decisions" to mortgage the future for the present, with regard spent fuel storage, applies equally well to decisions authorizing construction and operation of hazardous plants without knowing definitely how and when it can be or when it will be dismantled, or the costs of dismantling.

Marble Hill and THE FRONT END OF THE FUEL CYCLE

Environmental costs and health effect costs of fueling Marble Hill over its lifetime have not been entered in the cost/benefit ratio of that facility. Such costs include the sealing of uranium mines, rehabilitating mill tailings, health effects of worker-exposures to radon, and public-at-large exposures to radon emissions from the mining and milling processes and waste piles, etc.

The Marble Hill Record was reopened by the NRC on May 30, 1978, to receive new evidence on radon releases and on health effects resulting from radon releases because the value assigned to radon-222 emissions expected to occur as a result of the mining and milling of uranium was incorrect (Walter H. Jordan, in his Memo to the Chairman of the Atomic Safety & Licensing Board, thought the correct value might be some 100,000 times greater).

MARBLE HILL AND ALARA

The applicants Final Safety Analysis Report (Chapter 12) states that the Byron/Braidwood design (Marble Hill is a replicate plant) establishes a practical basis for keeping the exposure of workers to radiation AS LOW AS REASONABLY ACHIEVABLE (ALARA).

Not enough attention was paid in the design of currently operating reactors to lower exposures appropriately on an ALARA basis.

Since considerable effort is being directed to lowering permissible levels of radiation exposure of nuclear workers we will want to know if Marble Hill will be able to meet those standards, too, effectively.

CONSERVATION "ENERGY" AND SOLAR ENERGY ARE VIABLE ALTERNATIVES

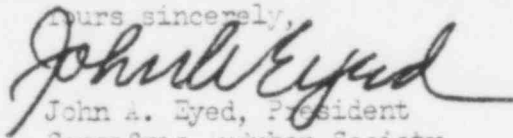
Solar Energy was dismissed in the Final Environmental Impact Statement for Marble Hill as still in the conceptual stage and not a technically viable alternative. PSI predicted at the same time that conservation of energy would be offset by a need to shift from scarce and dwindling fossil fuels to electric energy.

In the Final Environmental Report: Operating License Stage, solar energy was not mentioned as an alternative energy source.

Various reports of Federal agencies, issued within the last year and a half, have concluded that the solar potential, both short and long term, could contribute significantly to our energy needs. Even the Harvard Business School has joined the ranks of solar advocates in their recent publication *ENERGY FUTURE: REPORT OF THE ENERGY PROJECT AT THE HARVARD BUSINESS SCHOOL* (6-year study).

Everyone is agreed that we need to conserve energy and that is the most immediate way that we can meet the present crisis, and future growth, until widespread adoption of small-scale, onsite solar systems has taken place. We would welcome the opportunity to present evidence on the solar potential at a Hearing on Marble Hill.

Yours sincerely,



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C: To Service List

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APPENDIX 1

Public participation in the construction-licensing stage of Marble Hill was a charade performed to a complex system of Nuclear Regulatory Commission rules. The "decision" to build Marble Hill was made by the "powers-that-be". Prior to and accompanying pre-hearing conferences and public hearings (which began March 8, 1977), Public Service Indiana (PSI) and State of Indiana agencies made unilateral decisions which proclaimed the construction license a "fait accompli".

Dr. Harold G. Cassidy summed it up in a statement before the Atomic Safety and Licensing Board (ALB), December 2, 1976: The result of the process (regulatory) comes through as an orchestrated passage from pre-set premises to foregone conclusions."

...PSI received a rate increase of average 26% by the Indiana Public Utilities Commission effective October 1975 for construction that included the Marble Hill Units;

...PSI secured an agreement with County Commissioners of Jefferson and Clark Counties early in 1976 for upgrading of the Bower-Marble Hill Road in the Fall of 1976 at a cost in excess of \$1.4 million, the funds being "donated" by PSI. (The ALB staff learned of PSI's action indirectly)

...PSI was notified by the Indiana Stream Pollution Control Board, January 30, 1976, that they had secured the Board's approval of section 401 certification of compliance. The Stream Pollution Control Board's approval in 1976, as well as the issuance of the 401 construction permit by the Indiana Environmental Management Board in May 1978, were granted without public notification or public hearings, although the State Boards were well aware of "significant public interest in the proposed permit."

...PSI's Nuclear Vice-President, James Coughlin, was quoted in the Louisville Times of June 9, 1976, as saying that PSI would be making their final payment of \$2.53 million that month for fuel for Unit 1 (having already paid more than \$5 million for uranium enrichment.)

The granting of the construction license to PSI was slowed by the contention of the Commonwealth of Kentucky that PSI must secure section 401 discharge permits from Kentucky as well as Indiana because of their interpretation of the boundary line (low-water mark on north side of Ohio River) between the two states.

...PSI was granted "limited work authorization" for Marble Hill by the ALB while the Atomic Safety and Licensing Appeal Board considered Kentucky's appeal. Under "limited work authorization" PSI was able to prepare the site and begin installation of structural concrete in February 1978, two months before receiving the license to construct (CL) on April 4, 1978 (\$20,734,000 had been spent on Marble Hill by December 1977).

After losing their appeal, the Commonwealth of Kentucky and STV sued the Nuclear Regulatory Commission and the State of Indiana on the boundary issue. The case is pending in the U.S. Supreme Court.

Save The Valley (STV) took an injunctive-type action against Indiana's Environmental Management Board for failing to notify the public and hold a hearing on the 401 permit.

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