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Subj: Response to [NRC-2008-0664] RIN 3150-AI54
Variable Annual Fee Structure for Power Reactors;
Advance notice of proposed rulemaking (ANPR)

Encl: (1) Adams Atomic Engines, Inc. [Comments on NRC-2008-0664]

Thank you for the opportunity to respond to this important proposal. The current flat rate fee structure provides substantial economic incentives to build the largest possible reactors. This incentive structure results in less than optimal technical choices.

A cost-of-service based fee structure, with an effective auditing regime by an independent organization would provide the nation a more effective regulatory environment with long term incentives to reduce the complexity of the regulated systems and their ultimate safety.

A detailed response to each question is included as enclosure (1).

Sincerely,

Rod Adams
President, Adams Atomic Engines, Inc.

Q.1. Should the NRC establish a variable annual fee structure based on either the licensed thermal or electric power limits of the power reactor? What variables should be considered in establishing such a fee structure? In particular, should reactors producing process heat be treated the same as reactors producing heat for the generation of electricity? What are the considerations associated with establishing a variable annual fee structure based upon thermal, as opposed to electric power?	A.1. The annual fees should be based on the cost of providing the regulatory service. Simple reactors with passive cooling systems should require less regulator time to verify that they are meeting their license requirements. A fee structure that is based on the complexity of the required oversight would provide the right design, construction and operating procedure incentives. If proper accounting for costs is not possible, then the fee should be variable and based on the licensed power output of the reactor. In general, process heat reactors should be treated in an equivalent manner. If there is tight integration between the reactor heat output and the process heat customer, there may be a more complex and time consuming regulatory regime required. Conversely, if both process heat and electric power reactors have little functional dependence on the ultimate heat consumer, the regulatory effort may be significantly reduced.
Q.2. If the NRC establishes a variable annual fee structure, what should the ranges be for	A. 2. There should be no reason to base the fees on ranges of power output if the structure is based on

each group or category of reactors? What criteria should be used to determine the fees for the different groups or categories of reactors (e.g., power level, reactor technology, associated NRC resources)?	the actual regulatory complexity as described above. However, if the decision is made to simplify the computation of the fee by making it a function of the power output, the formula should be a direct multiplication of the licensed thermal output times the fee per unit output. That would not be a difficult fee to administer.
Q.3. Current nuclear power plants use a configuration in which a single large reactor provides the heat to produce electric power. However, future plant concepts may include two or more small to medium sized reactors to provide the heat to power one or more turbines connected to an electric generator. Should a variable annual fee structure account for the potential configurations?	A. 3. Yes. The fee structure should allow for multiple reactors feeding a single heat consumer. There should not be a disincentive to use a multi-reactor configuration if that provides a safer result. With passively cooled reactors, the surface area per unit volume is an important design consideration. If a certain amount of core volume is needed to produce a certain amount of heat output, it can be done with either a single large core or with multiple cores of smaller volume. The smaller cores have a higher ratio of surface area per unit volume and provide a simpler way to ensure that passive cooling mechanisms keep maximum core temperatures within design limits.
Q.4. Current nuclear power	A. 4. Yes. The fee

plants have one, two or three large reactors located at the same site. Current applications for new reactors could result in up to four large reactors at a single site. However, future plant concepts may have up to twenty (20) reactors (modules) operating at the same site. Should the variable annual fee structure account for this configuration? If so, what are the considerations in establishing such a fee structure?	structure should account for the government cost reduction that may result by clustering reactors on a single site. Many of the regulatory considerations like site security would be common to all reactors. It should be less costly for the government to provide its required oversight to a single site with 20 reactors than to 20 geographically distributed sites with a total of 20 reactors.
Q.5. Currently, each licensed reactor located at the same site is treated as a separate unit for purposes of calculating and assessing the annual fee. However, external stakeholders in the past have suggested that a single comprehensive license be issued for a set of modular reactors located at a single site. The licensee would have substantial flexibility in determining whether and when to construct and operate each reactor module in such a plant. Should the variable annual fee structure account for this reactor licensing concept? If so, what are the considerations	A. 5. Yes. There should be an option for a single comprehensive license. However, there should be a clear understanding of the potential effects of construction of additional modules on the modules that are already in operation.

in establishing such a fee structure?	
Q.6. Are there other factors that should be considered in determining the annual fee for power reactors?	A. 6. Yes. The government should recognize that supplying energy is a competitive business with some degree of risk that requires even handed regulation to ensure safety and environmental protection. It is not good policy to charge fees for government services like NRC oversight to one form of energy production and to absorb those costs as a taxpayer expense for other forms of energy. For example, if a federal agency is tasked with enforcing emissions standards on fossil fuel plants, the plant owner should be charged a fee for to pay for the costs of proper monitoring. If the government makes the decision that the service should be provided at no additional cost, then it should make the same decision for nuclear reactor oversight and remove the NRC license fees.