OUR
The REGULATOR

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Jamaica's Sustainable Energy Future

By: Zia Mian – **Director General**

Developments in nuclear energy technology have now made it possible for it to be considered as a viable option for Jamaica's sustainable energy future and its national energy security. In this, the first of a two part series, I will share my observation on this critical issue.

Back in the 1970s, the International Atomic Energy Agency (IAEA) studied the market potential for deploying nuclear energy in Jamaica and found that the operation of nuclear power plants made economic sense only if the generation unit size could be around 1,000 Megawatts (MW). As a result the study concluded then, that the Jamaican power system did not afford a market size for deploying nuclear power generation economically. Today, the total installed public generation capacity in Jamaica remains below the critical threshold of 1,000 MW. The present installed capacity is about 815 MW and the peak system demand is about 640 MW.

As far as the development of nuclear power in the United States is concerned, since 1970 no new approval was granted for construction of nuclear power plants. In 1972 the number of new nuclear plants ordered reached as high as 35 however following the "oil crisis" of 1973, it dropped to zero.

During the Carter Administration of the late 70s, there was no new construction of nuclear power plants because of the actions of interest groups which stymied the efforts. I recall that as a member of the Trilateral Commission's Review Task Force (Chaired by Prof. John Sawhill, President NYU and later Asst. Energy Secretary, US Department of Energy) that was formed to review President Carter's proposed Energy Policy, we found no strong support for deploying nuclear power. The Carter policy emphasized tax measures, conservation and efficiency enhancements and a dramatic change in the American lifestyle to reduce energy consumption.

Also during the 1970s construction costs of plants were driven up by environmental delays and safety concerns were raised as the reason it took over ten years to obtain the necessary licenses. By 1981, the electric utilities in the United States were paying 17% interest on loans for the construction of power plants and construction times for nuclear power plants extended out from eight years to up to twenty years. The costs of new plants escalated from original estimates of about US$ 400 million to about US$ 4 billion at completion. In comparison, GE and other US firms built 1,000 MW and larger nuclear plants in Japan, Korea and Taiwan in four to five years and at very competitive costs.

There have always been concerns about the safety of operating nuclear power plants. According to the World Nuclear Association (WNA), "from the outset, there has been a strong awareness of the potential hazard of both nuclear criticality and the release of radioactive materials. There have been two major reactor accidents in the history of civil nuclear power - Three Mile Island and Chernobyl. One was contained without harm to anyone and the other involved an intense fire without provision for containment. These are the only major accidents to have occurred in some 14,000 cumulative reactor-years of commercial operation in 32 countries.

The risks from western nuclear power plants, in terms of the consequences of an accident or terrorist attack, are minimal compared with other commonly accepted risks. Nuclear power plants are very robust. Safety is achieved through what is known as 'defence in depth'. In nuclear engineering and nuclear safety, 'defence in depth' denotes the practice of having multiple, redundant and independent layers of safety systems for the single, critical point of failure: the reactor core. This helps to reduce the risk that a single failure of a critical system could cause a core meltdown or a catastrophic failure of reactor containment.

Research has also proven that nuclear plants are the lowest-cost producer of baseload electricity. The average production cost of little over two cents per kilowatt-hour includes the costs of operating and maintaining the plant, purchasing fuel and paying for the management of spent fuel. Notwithstanding, the share of nuclear energy in the US electricity supply mix at present is at about 20%. The United States is lagging behind other countries in developing, deploying, enhancing and exporting nuclear plants and technology. In comparison France delivers 75% of its electricity from nuclear plants.

The recent energy crisis in California is one of the issues which arose out of the failure to build new power plants over the last three decades and has resurrected an interest in nuclear energy. In February 2010, President Obama pledged more than US$8 billion in conditional loan guarantees for the construction of two new nuclear reactors at Georgia Power's Vogtle Nuclear Power Plant (NPP). These reactors are just the first of many new nuclear projects that are likely to come on stream. The President has granted new authority to the Department of Energy and in his 2011 Budget has pledged support for six to nine new

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Jamaica's Sustainable Energy Future

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reactors (loan guarantees of about US$ 20 billion). This money is expected to come from the US Treasury.

Earlier this year, I attended a symposium in the United States which focused on the development of the Small Modular Reactors (SMR). The Symposium presented information on the designs and applications of SMRs. The SMRs are considered ideal for unique applications, which among others include remote deployment, military operations, water purification and reducing the cost of electricity by replacing expensive fossil fuel based generation capacity serving small power systems such as those in Jamaica. The SMRs are quick to build and their costs compare favourably with natural gas combined cycle (NGCC) plants as well as renewable power generation plants (e.g. wind power). The features of new reactors include increased safety and security, high reliability and use of non-weapon grade fuel. The re-fuel cycle, depending on design, ranges from 3 years to 25 years.

The experts at the Symposium have agreed that the deployment of SMRs will temper nuclear power safety and security concerns, non-proliferation, waste management, resource utilization and economy, as well as offer a variety of energy products and flexibility in design, siting and fuel cycle options. The SMRs offer the following important features, which suit the needs of smaller economies:

- Over 50 years experience of established/tested technology.
- Providing a solution for the growing need for reliable carbon free power.
- Providing scalable power supply - a single or distributed power source or "teamed" to provide large outputs.
- Simplicity of operations with few if any reactor moving parts and many years between fueling.
- The spent fuel would be stored on site and would be proliferation resistant.
- They will provide co-located power - very close to need - needing smaller transmission systems.
- They are suited for a variety of applications such as heat, power or a combination of both.
- They offer start-up options for developing nuclear technology in emerging markets/countries.
- They support the green parks - the 'nuclear battery' sustaining renewables.

In the next issue I shall discuss the case, steps and timing for deploying nuclear energy to alter Jamaica's energy supply mix.

EDITORIAL TEAM

Michael Bryce Collette Goode Marsha Minott Kishana Munroe

Regulating the Water Trucking Industry

Recommendations to the OUR.

The Water Trucking Industry underwent significant expansion as a result of the recent drought and the restrictions imposed by the National Water Commission (NWC), which resulted in increased demand for water supply. It is important to note that the industry continues to operate outside of crisis periods, as water is supplied to areas which receive low or no supply from the NWC and operations have continued since the drought was broken.

As consumer advocates, the CACU, like the OUR, believes that it is important to regulate and monitor the Water Trucking Industry as it is susceptible to several anomalies, public consumer health issues as well as environmental risks. Following on the decision of the OUR to regulate private enterprises engaged in the transportation and delivery of water to consumers in Jamaica, the CACU recommends the following set of rules:

- **LICENSING AUTHORITY**
  Bestow licensing authority on the National Water Commission (NWC) to sub-contract private operators (similar to that proposed for the JUTC) to provide water supply and delivery service to consumers, where the NWC is unable to adequately and efficiently service. Licenses would be issued to those private operators who meet the established licensing criteria, thereby being certified as an authorized provider of trucked water. This would allow the NWC to ensure that (and the OUR to monitor) private operators do not;

  a. Interfere with the NWC's watershed/ water catchment resource
  b. Source water from restricted areas such as wildlife protected areas
  c. Source water from unhealthy and unsuitable areas
  d. Operate contrary to established guaranteed standards

- **WATER TREATMENT**
  Licensed operators must possess sufficient knowledge and infrastructure in place to treat water. Water should be treated for turbidity levels and chemical components. Specific water treatment experts should be identified and be given the authority to test the water intermittently to ensure that operators do not operate outside of the regulations.

- **WATER TANKS**
  Clear and specific guidelines for the fitness of trucks must be established by the NWC and approved by the OUR. It has been observed that some trucks now involved in the trucking of water are not officially built for such a purpose. Rather, flatbeds have been modified with water tanks which pose a social and traffic hazard, as no regulations are in place to check and monitor the durability of a welded tank filled with water and carried on the back of a flatbed truck.

  It is also recommended that specific attention be given to the water contact surface of the interior of the tank. The interior coating that is used should be approved in compliance with regulatory and health standards, as stipulated by the experts. There are several options to choose from, stainless steel, Polyethylene, Galvanized epoxy etc. There exists limited information on the standards regarding water tanks in Jamaica; this affords the office an opportunity to construct a list of acceptable materials to be used by operators.

- **PRICING**
  This component of the water trucking industry has been the most problematic in the current circumstance. A structured and uniformed pricing regime would have to be established in order to avoid predatory pricing and other unacceptable practices, especially during crisis periods, when water is in short supply.

- **PARTNERS**
  There exists an international voluntary third party consensus organization where regulators may access technical information on such standards. NSF International, which has been accredited by the United States Environmental Agency, affords assistance to regulators within this field. The Jamaican Ministry of Health and the Environment and the Ministry of Water and Housing must be consulted in designing regulations for the water trucking industry. The National Environmental Protection Agency's (NEPA) participation is also critical to the proposed regulatory regime for water trucking.

- **PUBLIC CONSULTATION**
  The consuming public must be kept informed and consulted at the outset. Their participation and input must be included in the development and organization of the regulatory regime and the design of standards which will apply to the industry.

The CACU is committed to maintaining a balance between service providers and consumers, ensuring that consumers receive quality product and service and that guaranteed standards are adhered to, whilst preserving the integrity of the regulated water industry. We hope that the above recommendations will be considered in the Office's attempt to regulate the Water Trucking Industry both for the security of consumers and the insurance of maintaining order across the regulated industries.

We commend the Office of Utilities Regulation in their bid to preserve coherence between public service suppliers and consumers and we look forward to continuing and contributing to the discussion on this important public good – water. The CACU is once again appreciative of the continued good relationship with the OUR.

Regards.

Yours sincerely,
CONSUMER ADVISORY COMMITTEE ON UTILITIES (CACU)

Yasmin M. Chong (Ms)
Chairman

SuDuko answers from last edition

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The REGULATOR

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This division comprises the Consumer Affairs Department, the Public Affairs Department and the Information Centre (OURIC). The staff advises the Office on consumer issues, manages the appeals process and engages in public education activities. The OUR's obligations under the Access to Information Act are discharged through the Information Centre. This Division also supports the work of the Consumer Advisory Committee on Utilities (CACU) which is an independent advocacy group, the operations of which are facilitated by the OUR.

Be an informed consumer – get information on your rights under the **Guaranteed Standards** and submit your claim for breaches to the service provider, where compensation is not automatic. Copies of the Guaranteed Standards are available at the JPS and NWC offices islandwide as well as the OUR website at www.our.org.jm. You can also get information on utility subjects through our Information Centre. If you remain dissatisfied with the service provider's response to your complaint, you may **appeal** the utility company's decision to the OUR in writing.

SuDoKu

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But how do I do it?

The object is to insert the numbers in the boxes to satisfy only one condition: each row, column and 3x3 boxes must contain the digits 1 through 9 exactly once.

OUR's Role

The Office of Utilities Regulation Act of 1995 established the Office of Utilities Regulation **('the Office'/OUR)** as a body corporate. Under the Act, the OUR is charged with the responsibility of regulating the provision of utility services in the following sectors:

- Electricity
- Telecommunications
- Water & Sewerage
- Public transportation by road, rail and ferry

The OUR is headed by the Director General, who along with the Deputy Directors General comprise **'the Office'**. The Director General is appointed by the Governor General and the Deputy Directors General are appointed by the Prime Minister.

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