

**Richard A. Meserve**  
President Emeritus  
rmeserve@carnegiescience.edu

June 29, 2020

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WASHINGTON, DC

Director General Rafael Mariana Grossi  
International Atomic Energy Agency  
Wagramer Strasse 5  
A-1400 Vienna  
Austria

Dear Director General Grossi :

I am writing in my capacity as Chairman of the International Nuclear Safety Group (“INSAG”). Our terms of reference state that INSAG should provide “recommendations and opinion on current emerging safety issues” to the IAEA and others. During my term as Chairman, I have customarily sought to fulfill this obligation not only through the various INSAG reports, but also with an annual letter. My past letters are available on the INSAG website at <http://goto.iaea.org/insag>. This correspondence constitutes this year’s installment of the annual letter.

This letter is being drafted as the world confronts the COVID-19 pandemic. INSAG held a virtual meeting on May 20<sup>th</sup> in which the principal focus of the discussion was the pandemic and its implications for nuclear safety. We had the benefit of a comprehensive report by the IAEA staff on the variety of efforts that the IAEA has undertaken and has underway, as well as written submissions on the experience in various countries from INSAG members. We commend the IAEA’s actions and those of the various countries, but we see significant uncertainty as to the future course of the pandemic, with resulting implications for the maintenance of nuclear safety. This letter is to comment on the situation.

All around the world the nuclear industry and its regulators have been aggressive in confronting the pandemic. The various elements of the nuclear enterprise, as a general matter, continue to function effectively and safely. Nuclear power provides a significant portion of the electricity supply in many countries and, of course, electricity provides the foundation for the functioning of modern society. This strong performance is particularly valuable in this difficult time. Nuclear technology also plays a critical role in medical diagnosis and treatment and, with assistance from the IAEA, this important component of the healthcare system has continued to function, although there have been challenges in the international transport of medically significant radionuclides.

Carnegie Institution  
of Washington

1530 P Street NW  
Washington, DC 20005

202 387 6400 Phone  
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In recognition of the risks to staff, the nuclear industry and its regulators have made adjustments in accordance with each country's health regulations to assure protection from the coronavirus while simultaneously providing adequate assurance of nuclear safety. This has been undertaken by implementing a variety of measures: careful medical surveillance of staff and isolation of infected or potentially infected individuals, introducing social distancing in the performance of duties where possible, providing personal protection equipment, encouraging or requiring remote work where possible, allowing the postponement in appropriate cases of maintenance and surveillance work, extending workhours and reducing staffing in some cases, special efforts at disinfection of common areas, and limiting travel. Problems have arisen occasionally from the difficulty of securing assistance from international experts because of the challenges associated with travel and in obtaining parts and components from international suppliers. In the main, however, things have gone well and the nuclear sector has been a model of appropriate response.

Nonetheless, there is a need to prepare thoughtfully for the future. Although some countries have been very successful in controlling the spread of the coronavirus, others face still growing numbers of infections. Indeed, as this is written, some parts of the world are confronting only the initial introduction of the coronavirus and may face significant health challenges over time. Moreover, although the modeling has uncertainty, it generally predicts possible further waves of infection in the months ahead, particularly with the resumption of economic activity, the return of travel, and the relaxation of social distancing. This could result in the growth of infections in countries that, at the moment, are controlling the pandemic. Given the absence of a vaccine or effective therapeutics, the world should prepare for the possibility that hard times remain ahead. Indeed, they could be more difficult than what has already been endured.

This situation requires careful planning and preparation now. Although safe operations have been achieved by adjustment of past practices and the postponement of certain activities, surveillance and maintenance activities that have been postponed must eventually be undertaken if safety is to be maintained. Full-scale outages and refueling must resume. Indeed, refueling of plants cannot be long postponed if reliable electricity supply is to be available through the winter. We urge that risk be used to inform the priorities for such work. Careful interaction among health and nuclear safety experts should guide the planning.

In this connection, the demand of electrical production should not be allowed to result in a tradeoff against safety. Plant operators should anticipate and

prepare for the possibility that there could be prolonged interruptions in the supply chain for parts and components. In particular, stockpiles of testing materials and personal protective equipment should be built up to limit any flare of infections among staff. Given the possibility that a pandemic could decimate the staff in positions important to safety, utilities and regulators should prepare now by increasing the numbers of certified staff, by training people to serve as “back-ups” in important areas, and developing and enforcing procedures to avoid commingling of staff and thereby to limit the spread of COVID-19. In addition to staff directly involved in plant operations, there is a need to assure sufficient qualified staff in other areas, such plant security, radiation protection, firefighting, and management oversight. The preparations should also include consideration of the impact on emergency preparation and response because the pandemic could affect the capacity to implement emergency plans by both plant staff and outside responders. Moreover, in the event that circumstances require plant shutdown, utilities should prepare for the possibility that there could be significant reduction in electricity production by nuclear facilities.

One interesting dimension of the current circumstances is the widespread introduction of remote work. In fact, it seems likely that permanent changes in work practices throughout all sectors of a country’s economy may result from the current experience, with implications for the nuclear sector. On the one hand, the reduction or elimination of face-to-face meetings may prevent awareness of circumstances in the plant of which others should be aware. It could inhibit the development of a culture of common purpose in safe operations. And remote engagement by supervisors could limit awareness of failures in procedural adherence and the pursuit of careful practices. On the other hand, there are some early suggestions that the new ways of engaging with others could have long-term benefits through, for example, the enhancement of teamwork. The full effects of the changes in the nature of work bear careful observation.

There are also some general lessons from the pandemic that extend beyond the nuclear sector. First, and perhaps most obviously, there is a need to confront risks forthrightly. Most countries in the world were unprepared to deal with the pandemic. There was ample warning of the risk; there have been six pandemics in the last century and an abundance of predictions from the scientific community of the high risk that a devastating pandemic might arise. Yet, complacency was allowed to limit preparations. The nuclear sector prides itself (appropriately) on deep evaluations of risk and of using risk insights as an important tool to prevent or mitigate the realization of severe consequences. That same approach should be applied much more widely. In this connection, it is necessary to consider risks

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that include, but extend far beyond pandemics. Society confronts other risks that have high probability – climate change chief among them – and yet we allow complacency to guide our actions far more than is appropriate.

Second, the COVID-19 experience reinforces the need for a willingness to take swift action guided by careful advance planning. Those countries that acted to respond to COVID-19 promptly have suffered far less than those that acted slowly. Although their initial steps may have seemed extreme, those societies that acted quickly and decisively have ultimately suffered far less societal and economic harm than those that postponed action. In this connection, experience in the nuclear world indicates the need not only for prompt action, but also for careful and thoughtful comprehensive planning to guide those actions. Many deaths could have been avoided in the aftermath of the Fukushima tsunami if the schedule and means for the evacuation of patients in critical care facilities had been carefully thought through in advance.

Finally, international cooperation is essential. The entire world confronts a challenge and the impact of the coronavirus will be minimized if we cooperate with each other. The IAEA has served as an important clearinghouse for the exchange of information and that role should continue. There are lessons to be learned from the experience of others and, although it is too early to determine all of those lessons, we should assure that we learn from this experience and take action.

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INSAG will continue to monitor the situation and is prepared to offer further guidance. In the meantime, please feel free to contact me if there are particular issues that you would like INSAG to explore.

Best regards.

Very truly yours,



Richard A. Meserve

cc: Juan Carlos Lentijo  
INSAG Members