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## Radioactive Waste Crimes and their Punishment: An Analytical Study

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### **Abstract**

*This research aims to analyze the crimes related to radioactive waste and their punishment. It was organized into two sections. The first section deals with defining the search terms. The second section addresses the radioactive waste crimes and their punishment. One of the most important findings of the research is that, despite the large amount of legislative texts, the Saudi legislator neglected to set a precise, comprehensive definition that prevents this type of crime. A precise definition may help determine the reasons and motives that led the legislator to ability to criminalize such deeds. On the other hand, the penalties stipulated in the regulations related to the subject of the research are considered very light and not commensurate with the amount of damage that radioactive waste may cause to the environment. There is an overlap between the stipulated penalties. One of the most prominent recommendations of this research is the suggestion to consider penalties related to radioactive waste crimes in proportion to the gravity of the harm they cause. The need to work to protect the environment from pollution. The research urges international cooperation to seek in turn to achieve this goal and to take all appropriate measures to protect and improve the environment.*

**Keywords:** radioactive waste crimes, punishment

### **Introduction**

The problem of radioactive waste is one of the most important problems facing countries of the world, especially developing countries. Developing countries are considered the most important source of pollution because they contribute directly to environmental pollution.

This type of pollution has an impact on the human element and the components of nature. Additionally, this waste has multiple sources and carries an extreme danger in its chemical and organic properties. It has the ability to persist for a long time. These wastes require special methods for handling and disposal to avoid their dangers to health and the environment.

The United Nations called for organizing the first international conference on the environment due to the deterioration of the global environment. This conference was known as the "Human Environment Conference" and was held in Stockholm, Sweden in 1972 AD. The goal of the conference is to achieve common principles to guide people to preserve and develop the

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human environment and to discuss ways to encourage governments and international organizations to do what is necessary to protect and improve the environment to achieve sustainable development. Then successive conferences were concluded, agreements were concluded, and efforts were made in this field.

There is no doubt that the Kingdom of Saudi Arabia's Vision 2030 is concerned with strengthening its political, developmental and economic position. The Kingdom has set the vision of the environment and sustainable development as its main goals. The vision stipulates the necessity of preserving the environment as one of the top priorities as a religious, national and humanitarian duty. It is a responsibility of future generations, as it is considered one of the basic components of quality of life and a necessity to reduce levels of pollution in the environment. Therefore, it was decided to address this topic under the title: (Radioactive waste crimes and their punishment: an analytical study).

### **Significance of Research**

The significance of the research is due to the following

- 1) Radioactive waste crimes cause great harm and have articles that govern them because of the threat they pose to the country and the security and safety of individuals and society.
- 2) The issue of radioactive waste is considered one of the topics that has attracted the attention of various international legislations as it addresses an issue of the highest priority as it relates to human life.

### **Reasons For Choosing the Research Topic**

This topic was chosen for several reasons, including:

- 1) Paying attention to environmental issues, especially the problem of radioactive waste, which occupies great interest in the Saudi and international systems.
- 2) The scientific importance of the research topic and the scarcity of a previous study that met the risk elements that characterize the components contained in radioactive waste.
- 3) The desire to study the issues of radioactive waste contamination.

### **Objectives of Research**

The research aims to achieve the following

- 1) Explaining the seriousness of the problem of environmental pollution with radioactive waste, which threatens the very existence of humans and other organisms due to the doubling of global production of radioactive waste and the increasing rates of its cross-border transfer from developed countries to developing countries.
- 2) Identify the position of the Saudi legislator on the problem of environmental pollution with radioactive waste.
- 3) Identify the crimes of radioactive waste and their punishment in the Saudi system.

### **Literature Review**

The first study is "Regular protection of the environment in the Kingdom of Saudi Arabia: A comparative study" by Dr. Ahmed Hamid Al-Badri, King Abdulaziz University Library. It agrees with this research in their approach to environmental protection in the Saudi system.

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Al-Badri's study differs from the present study in that it dealt with regulatory protection from the administrative authority and did not mention the penalties prescribed for radioactive waste crimes, while this research talks about radioactive waste crimes and the penalties prescribed for them. Unlike this research, Al-Badri's study did not address the texts of Saudi legislation in general regarding radioactive waste crimes.

The second study is "The crime of polluting the environment: a comparative study" by Dr. Ibtisam Saeed Al-Malkawi, King Abdulaziz University Library. Al-Malkawi's study agreed with the present study in that both studies address the issue of protecting the environment from pollution. Al-Malkawi's study addressed the definition of the environment without including the definition of radioactive waste and the crimes resulting from it, whereas the present study did. Moreover, Al-Malkawi's study was not exposed to the texts of Saudi legislation in general regarding radioactive waste crimes, but rather was exposed to crimes of environmental pollution in some Arab and foreign countries (Japan, Egypt, Sudan, Syria, European Union countries), while the present study addressed the radioactive waste crimes in the Saudi system.

The third study is "Criminal liability for the crime of environmental pollution in the Saudi system: a comparative study" by Samia Dhafer Mufleh Al-Shahrani, King Abdulaziz University Library. Al-Shahrani's study agreed with the present study in their approach to protecting the environment in the Saudi system, but differs from it in that it dealt with the definition of the environment and the crimes of polluting it, and did not address what the present study dealt with in terms of the definition of radioactive waste, its crimes, and its punishment.

### **Research Methodology**

This research was based on the analytical approach. The analysis adhered to the following steps

- 1) Collecting statutory texts related to the research topic and analyzing them,
- 2) Attributing Quranic verses by mentioning the name of the surah and the verse number in the margin, and writing them in Uthmani script,
- 3) Attributing the texts and opinions of scholars directly to their books, and not attributing them through an intermediary except when the original is not possible,
- 4) In the case of conveying a statement or opinion in the text, the quoted text is placed between two quotation marks and the source is indicated in the bottom margin of the page in the following manner: the name of the author - the title of the book - the part - the page. However, in the case of conveying in the meaning, it is preceded by the word (to be considered),
- 5) Controlling ambiguous words by vowelization, especially those words that if they are not vowelized, would create ambiguity,
- 6) Taking care of the correctness and integrity of what is written from a spelling and linguistic standpoint, and taking into account the good consistency of speech and the sophistication of its style,
- 7) Append the research with recognized technical indexes.

### **Research Outline**

The research consists of two sections, a conclusion, and indexes. The first section i.e. definition of the terms of the study. This section has two topics. The first topic addresses the definition of radioactive waste crimes. The second topic discusses the definition of punishment of such crimes.

The second section is about the radioactive waste crimes and their punishment. This section has two topics: radioactive waste crimes and the punishment for radioactive waste crimes. The conclusion of this research includes the most important results and recommendations. Finally there is a list of index that contains appropriate recognized technical indexes.

## **First Section: Definition of Research Terms**

### **First Topic: Definition of Radioactive Waste Crimes**

Firstly, waste, linguistically is defined as what is removed from a thing due to its poor quality. Thus, waste is the remainder, excess, or what is in excess of what is needed. It is one of the people's waste and their vices, rain waste refers to its sprinkler. When it is said someone is of the people's waste, it means he is of their vices. Cigarette waste is its ashes.<sup>1</sup> Accordingly, the definition of waste in language revolves around what was removed from the thing due to its poor quality, and the rest of the thing.

Secondly, waste, terminologically, has been known by several definitions, such as "waste left over from industrial, mining, craftsmanship, and commercial operations, as well as waste from homes, hospitals, and radioactive waste".<sup>2</sup> The Saudi legislator defines waste as "dumped or neglected materials not excluded according to Article Four (C-1) and they must be disposed of for one of the reasons mentioned in Appendix One. They can be disposed of by performing one of the operations mentioned in Appendix Two. They include materials that are thrown away or to be recycled if they are collected and accumulated before they are recycled or burned to extract energy from them or use them as fuel or to produce fuel."<sup>3</sup>

Thirdly, the term "radioactive wastes" has many definitions. It is defined as "Those radioactive materials that developed countries work to transfer after they see that they cannot be used in any activity, whether military or peaceful, and this is what is called enriched uranium."<sup>4</sup>

Fourthly, the term "crime", linguistically, is originated from "to commit a crime" meaning to gain and cut off. It is said, it is an Arabized Persian word.<sup>5</sup> Crime and the offender mean the one who wins and so-and-so committed a crime, meaning he acquired the sin, and crime means felony and guilt.<sup>6</sup>

Fifthly, crime, terminologically, has been known by many definitions, such as "An incident that is committed to harm the interest of its protector, regulated by the penal system, and has resulted in a criminal effect represented by the penalty".<sup>7</sup> The shortage of this definition is that it only included acts punishable under the penal system.<sup>8</sup> Yet there are some other laws that criminalize some acts and establish a stipulated penalty for them, such as the customs system and other special laws. Thus, it is clear that this definition only included criminal crimes, and

<sup>1</sup> From "Dictionary of the Text of the Language" (vol. 5, p. 522), by A. Reda, 1380 AH, Dar Al-Hayat Library, Beirut; Dictionary of the Contemporary Arabic Language (p. 263), by A. M. Omar, 1429 AH, Al-Shorouk International Library, Cairo; The Intermediate Dictionary (p. 98), by Arabic Language Academy, 1425 AH, Al-Shorouk International Library, Cairo.

<sup>2</sup> Adapted from "Hazardous Waste in Africa, Risks and Challenges of Environmental Protection," by S. R. Faraj, 2018 AD, Saudi Qiraat African Magazine, (35), p. 56.

<sup>3</sup> Article No. (1) The General Environment Law and its Executive Regulations issued by Royal Decree No. (M/34) on 7/28/1422 AH.

<sup>4</sup> Adapted from "International Responsibility for Transferring Nuclear Waste to Developing Countries," (p. 70) by M. S. Al-Zoubi, 2010, Master's thesis, Faculty of Law, Middle East University.

<sup>5</sup> Adapted from "Al-Sihah Taj Al-Lughah wal-Sihah Al-Arabiyyah," (vol. 5, p. 1885), by I. H. Al-Jawhari, 1407 AH - 1987 AD, Dar Al-Ilm Lil-Millain, Beirut, fourth edition, , verified by Ahmed Abdel Ghafour Attar,

<sup>6</sup> From "Al-Qamus Al-Muhit, Al-Fayrouzabadi," (vol. 4, p. 88), and

Taj Al-Arous from Jawaher Al-Qamus, (vol. 9, p. 341), by Al-Zubaidi, Al-Hayat Library, Beirut, Lebanon.

<sup>7</sup> From "The Penal System, General Section," (p. 84) by M. M. Salama, 1979, Dar Al-Fikr Al-Arabi,

<sup>8</sup> Abramson, C.I. (2023). Research Methods in Comparative Psychology: A Tutorial. The Journal of Mind and Behavior, 44(1/2), 111-134.

neglected civil crimes and administrative and disciplinary crimes. Some other scholars defined it as "legal prohibitions that God has forbidden by punishment or discretionary punishment".<sup>1</sup>

Sixthly, the crime of radioactive waste is defined as an additional component. Taking into consideration the illustrated definitions of radioactive waste, it can be said that the definition of the crime of radioactive waste as an additional component is the legal description of the act resulting from the disposal of dumped or neglected radioactive materials or their waste, in bad faith, negligence, or illegal use that causes or constitutes harm to humans or to the environment. To sum up, it is considered a violation prohibited by law or regulation.

## **The Second Section: The Definition of Punishment**

### **Firstly, Defining Punishment Linguistically**

It is said, "He seized the thing" means "withholding it", and the seller seized the commodity means withholding it from the buyer until he receives the price. Thus, withholding refers to confinement and prevention, and it is related to punishment and confinement.<sup>2</sup> These terms are linked to torment.<sup>3</sup>

### **Second: Defining Punishment Technically**

Punishment has been defined with multiple conventional definitions. One of the definition regards it as "A specific criminal penalty, determined by law, involving intentional pain, imposed by the judicial authority through criminal proceedings on anyone who commits an act that the law considers a crime".<sup>4</sup> Another definition considers it as "the prescribed penalty or what can be determined in the interest of the group for disobeying the order of the law".<sup>5</sup>

## **The Second Section: Radioactive Waste Crimes and Their Punishment. It Consists of Two Main Topics**

### **First Topic: Radioactive Waste Crimes**

Criminal behavior in these crimes may be positive or negative, and therefore they will be discussed according to whether the criminal behavior is positive or negative.

### **First: Examples of Positive Criminal Behavior in Radioactive Waste Crimes are as Follows**

- 1) The crime of trading, importing and exporting of radioactive waste without a license

The Saudi legislator indicated in the Nuclear and Radiological Uses Control System that: (It is prohibited for any person to export or import nuclear materials or what related to, radioactive materials or facility components, or any material specified by the Commission unless he obtains

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<sup>1</sup> From "Criminal procedures for border crimes in the Kingdom of Saudi Arabia and their impact on establishing security," by A. M. Dhafir, 1415 AH, Mecca Press, Riyadh,

<sup>2</sup> From "Lisan al-Arab," (vol. 9, p. 307), by Ibn Manzur, , 1418 AH - 1997 AD, Dar Revival of Arab Heritage and the Arab History Foundation, Beirut, Lebanon, second edition.

<sup>3</sup> From "Al-Mufradat fi Ghareeb Al-Qur'an", (4<sup>th</sup> ed., p. 343), by Al-Raghib Al-Isfahani, 1426 AH - 2005 AD, Dar Al-Ma'rifa, Beirut, Lebanon.

<sup>4</sup> From "Penal Code, General Section", (p. 534), by A. Muhammad, 2000, New University House, Alexandria.

<sup>5</sup> From "The Philosophy of Punishment in Islamic Sharia and Law", (1<sup>st</sup> ed., p. 49), by F. Okaz, 1402 AH - 1982 AD, Okaz Libraries, Jeddah.

a license to do so).<sup>1</sup> In the general environmental system, it stated: (It is prohibited to bring radioactive waste into the Kingdom of Saudi Arabia, including its territorial waters or the exclusive economic zone, and it is prohibited to throw or discharge any radioactive pollutants by ships or others into the territorial waters or the exclusive economic zone).<sup>2</sup> "Handling" means (Everything that leads to its movement for the purpose of collecting, transporting, storing, treating, or using it).<sup>3</sup> In fact, trading in itself is not considered a crime and is not punishable by the system, as any person can handle radioactive waste as long as he obtains a license or a prior license issued. From a competent authority, licensing is one of the most important preventive guarantees for protecting the environment he competent bodies for environmental protection are not permitted to grant licenses unless they meet the necessary conditions<sup>4</sup>. Once those conditions are met, permission is issued to practice the activity in accordance with the requirements of environmental protection.

Importing in general is "an economic term for a legitimate, regular process regulated by the system, which represents the introduction of the commodity into the territory, whether accompanied by a person or by shipping it from abroad".<sup>5</sup>

This is the general meaning of import, as it applies to goods and materials that the system permits to be imported. As for importing prohibited materials, it is prohibited according to the system. Hence, bringing the materials and radioactive waste into the borders of the region in any form, whether accompanied by a person or through a person or company from abroad, it is prohibited in accordance with what is indicated in Article (14) of the General Environmental Law. Likewise, allowing the passage of any shipment of radioactive waste into the territory of the Kingdom is prohibited, even if it is not intended to bring it within the borders of the region, so only passage is sufficient.

## 2) The crime of establishing radiation facilities and disposing of waste without a license

The Saudi regulator was keen to get rid of radioactive waste that threatens human life and the environment, so it stipulated that: (It is prohibited to establish any facilities for the purpose of disposing or treating radioactive waste except with a license issued by the competent authority. Such license can be issued only after taking the Ministry's permission, besides adhering that the disposal procedure of those wastes shall be in accordance with the conditions and standards stipulated. The instructions are specified for this purpose in a way that ensures no harm to the environment).<sup>6</sup>

The Saudi regulator defined the institution or facility as: (any facility that includes the nuclear facility, the facility in which a radioactive source is used, mining facilities and processing of raw materials such as uranium mines; radioactive waste management facilities; and any other place where radioactive materials are produced, processed, used, handled, stored or disposed wherever the safety and security are required.<sup>7</sup> Disposal is also defined as (Putting consumed fuel or radioactive waste on a permanent or long-term basis in a facility that meets the conditions).<sup>8</sup>

<sup>1</sup> See Article (14) of the Nuclear and Radiological Uses Control System, Royal Decree No. (M/82), (p. 21), dated 07/25/1439 AH, Kingdom of Saudi Arabia.

<sup>2</sup> See Article (14) of the General Environment Law, previous reference.

<sup>3</sup> From "Murad Legal, Economic and Commercial Dictionary," (p. 382), by A. F. Murad, Alexandria, Egypt.

<sup>4</sup> See Articles (5, 6, 18) of the Nuclear and Radiological Uses Control System, previous reference.

<sup>5</sup> From "Nuclear Radiation Contamination under the Penal System," (p. 35), by H. H. Qashqoush, Dar Al-Nahda Al-Arabiya, Cairo.

<sup>6</sup> See Article (1) previous reference.

<sup>7</sup> See Previous reference, No. 5, p. 5.

<sup>8</sup> See Article (13, 14), General Environmental Law, previous reference.

3) The crime of leaking radioactive materials

The criminal behavior referred to here is the failure of those responsible to produce, transport, store, recycle, treat or dispose of radioactive waste in accordance with the procedures and controls specified by the executive regulations and failure to take the precautions stipulated in the laws or instructions. The nuclear program and all the legislations related to protecting the environment from radioactive pollution stress the need to take precautions related to ensuring that radioactive materials do not leak, and thus pollute the environment.<sup>1</sup> Stipulations included a set of procedures and measures that are intended for protection against the occurrence of a leak and thus cause harm. This behavior is achieved by a positive action, which is performing actions that would cause the leak, or by a negative action. It consists of refraining from implementing what was ordered, whether by law or instructions, and taking the necessary measures to protect the environment and workers.<sup>2</sup>

4) The crime of increasing the rate of radioactivity beyond the permissible limit

The drafters of the system realized the importance of focusing on prohibiting this increase beyond the permissible limits. Article (18) of the Saudi Nuclear and Radiological Uses Control System indicated that the owner of the source must adhere to the maximum limit of the radiation dose and concentration of radioactive materials allowed according to the instructions.<sup>3</sup> Additionally, the Saudi regulator, Article (18), referred to this crime in that the level of radioactive waste or concentrations of radioactive materials may not exceed the permissible limit as determined by the authority concerned.

What is meant by the level of radioactivity is that the amount of ionizing radiation that if a body is exposed to during an unlimited period of time, it does not lead to tangible damage. As for the permissible limits of concentrations of radioactive materials, they mean the percentages of concentrations of radioactive materials in the air, that is, the permissible level of radioactivity.<sup>4</sup>

The material elements of this crime are achieved by the criminal behavior carried out by the perpetrator, whether positive or negative criminal behavior that would lead to an increase in the rates of radioactivity beyond the permissible limit in the environment.<sup>5</sup> It is conceivable that the crime occurred due to positive behavior, in any act that the regulator has forbidden, resulting in a specific criminal consequence such as the increase in the rate of radioactivity which is harmful to humans, workers and the environment. The crime also occurs due to negative behavior represented by the perpetrator's refusal to implement what the regulator ordered to take certain measures. The result is the occurrence of this increase in the rate of radioactivity beyond the permissible limits. The causal link is formed in both cases. It is determined between the positive or negative criminal behavior and the criminal result that stemmed from that. This crime is considered a crime of harm, whether the damage was caused to the environment or to humans.<sup>6</sup>

5) The crime of violating safety precautions and prevention requirements

"Radiation safety of the crime of violating safety precautions and prevention requirements" means placing a number of barriers between radioactive materials and the surrounding area so that the output of radioactive materials in the area surrounding the facility is less than the amount that could cause harm to its workers, residents residing nearby, or the surrounding

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<sup>1</sup> See Article (8) of the Control System for Nuclear and Radiological Uses, previous reference, p. 18.

<sup>2</sup> See Article (18) System for Control of Nuclear and Radiological Uses, previous reference, p. 23.

<sup>3</sup> From "Nuclear Radiation Pollution in Light of the Criminal Law," (p. 23), by H. H. Qashqoush.

<sup>4</sup> From "Environmental Crimes between Theory and Practice," by Ashraf Hilal, 2005, Dar Al-Nahda Al-Arabiya, Cairo.

<sup>5</sup> From "Criminal Protection in the Fields of Peaceful Nuclear Energy," (p. 459), by M. Al-Naghy, 2006, Police Press, Egypt.

<sup>6</sup> From "Criminal Protection in the Fields of Peaceful Nuclear Energy," (p. 459), by M. Al-Naghy, 2006, Police Press, Egypt.

environment. In addition to developing safety systems to control when any emergency occurs, it consists of several successive and independent lines of defense, so that if a malfunction occurs in one of them - the lines of defense - the second line is activated to avoid the occurrence of a disaster. Furthermore, it is a way for determining whose workers' responsibility and referring it to those who have the ability to act quickly and control the problem.<sup>1</sup> The Saudi regulator has stipulated that (Taking into account the principles of justification for the use of ionizing radiation and the optimal level of radiation doses and their limits, and guided by best international practices, the Authority issues regulations and decisions regarding the safety of activities, practices and facilities, and determines the categories of exposure subject to exclusion from the scope of the system or those exempt from the authority's oversight).<sup>2</sup>

## **Second: Examples of Negative Criminal Behavior in Radioactive Waste Crimes**

Criminal behavior in environmental crimes may be achieved by abstaining from committing an act required by the system without requiring the achievement of a specific material criminal result that causes a change in the external space as an effect of the criminal activity.

However, the problem that may arise is the extent to which the regulator considers negative behavior or what is known as abstinence, which is considered less positive behavior, is dangerous, as it reveals a negligent personality rather than a criminal one. Nevertheless, it cannot be denied its major role in crimes against the environment, which requires the street to intervene to criminalize this abstention, by imposing restrictions and obligations that affect individuals and establishments, based on performing certain actions or taking precautions. Specific or taking into account special environmental technical specifications.<sup>3</sup>

The regulatory stipulation is that determines the nature of criminal behavior. If the regulator prohibits an action that pollutes the environment, then committing it is positive behavior, and if he orders to do an action necessary to protect the environment, then refraining from doing it is negative behavior.

In both cases, it is compulsory to adhere to the stipulation in accordance with the principle of the legitimacy of criminalization and punishment. If there is no clear-cut stipulation determine the nature of criminal behavior, then the behavior will be positive or negative according to the position taken by the offender in reality.<sup>4</sup> If abstention in general is not committing an act ordered by a specific rule, then abstention of the criminal offense that the criminal regulator is concerned with, and which has criminal consequences, is only a specific category of negative behavior that harms or threatens to harm the interests subject to criminal protection.<sup>5</sup>

Sometimes the regulator is satisfied with criminalizing the behavior regardless of the harmful consequences it entails within the framework of what is known as crimes. Formal, and in other cases, the harmful result stemming from the behavior can be determined so that it is not considered a crime unless this result occurred and was the cause of it. This is known as material crimes, which are almost limited to the act of pollution, whatever its form or source, and whether it occurs on elements of the vital environment or non-vital.

<sup>1</sup> From "Nuclear Radiation Pollution Under the Criminal Law," (p. 77), by Hoda Hamid Qashqoush, previous reference..

<sup>2</sup> See Article (9) System for Control of Nuclear and Radiological Uses, previous reference, p. 19.

<sup>3</sup> From "Criminal Liability for Environmental Pollution," (pp. 65, 66) by M. H. Al-Kandari, 2005, PhD thesis, Faculty of Law, Ain Shams University, Cairo, Egypt.

<sup>4</sup> From "The General Theory of Environmental Assault Crimes (A Comparative Study between Criminal Law and Islamic Jurisprudence)," (pp. 97, 98), by A. M. Muhammad, 2017, Dar al-Nahda al-Arabiya, Cairo, Egypt.

<sup>5</sup> From "Crimes of Omission between Islamic Jurisprudence and the Man-made System," (pp. 137, 138), by A. A. Q. Qandil, , 2010, New University Publishing House, Alexandria.



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The legislation of all countries of the world has been concerned with limiting this act, the scope of whose effects could expand to threaten collective interests. Therefore, the requirements of the latter require expanding the scope of environmental criminalization to include acts of tangible and abstract danger, given that assault on the environment represents a violation of public rights.<sup>1</sup>

Therefore, it is clear that the forms of criminal activity are multiple depending on the nature of the incident. The activity may take the form of introducing radioactive waste into the Kingdom's territory.

It may take the form of dumping radioactive waste in protected areas, or it may take the form of non-compliance by commercial or industrial establishments with the procedures and controls specified by the executive regulations and appendices related to applying of general rules for the environment. All these forms of criminal behavior require the presence of the material element represented by the perpetrator engaging in criminal material behavior.

Besides that the violator is aware that what he brought into the country is radioactive materials or that he dumps radioactive waste in protected areas or that he was negligent in not observing environmental procedures and controls when producing or transporting or storing, recycling or processing radioactive materials.

The stipulations contain a set of procedures and measures that must be followed to protect both the environment and the world from the occurrence of a leak, and thus damage is there. This behavior is achieved by a positive action, which is performing actions that would cause the leak, or by a negative action, which is abstaining from carrying out what was ordered, whether that is by system or instructions to take the necessary measures to protect the environment and workers.<sup>2</sup>

### **The Second Topic: Punishment for Radioactive Waste Crimes**

Most environmental legislation stipulates a combination of regulatory penalties for committing prohibited acts of pollution. The special nature of the necessary protection for the environment requires it to be subject to a non-administrative penal system that is compatible with the interests worthy of protection. This is due to the diversity of forms of harm to the environment, and hence it is necessary to diversify the penalties resulting from them. Criminal and civil penalties are among the most important non-administrative penalties that find wide application within the scope of environmental protection legislation. In light of this, we will limit our study to criminal penalties as follows:

The criminal penalty means "The penalty stipulated by the system to be applied to every person proven to have committed the crime."<sup>3</sup> Despite the administrative nature of the environmental protection system, it may include some criminal penalties that are applied to crimes of environmental pollution. Accordingly, the criminal penalties are either original or consequential or supplementary.

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<sup>1</sup> From "Legislative Methodology in Environmental Protection: A Comparative Study," (p. 125), by A. A. Al-Fail, 2012, House of Culture, Jordan.

<sup>2</sup> See Article (16, 17) System for Control of Nuclear and Radiological Uses, previous reference, p. 22.

<sup>3</sup> From "Criminal Pensal Science between Theory and Practice," ( p. 35) by A. M. Muhammad, 1995, New University House, Cairo.

### First: Original Penalties

The original punishment is defined as “that which may be imposed individually on the offender on the basis of its sufficiency to achieve the meaning of the penalty corresponding to his action and may affect the offender’s person or property through torment”.<sup>1</sup> It includes imprisonment, a fine, or both. The penalty is based on Article (24) of the law. It stipulates that "without prejudice to any more severe penalty stipulated by another law, any person who commits any of the following shall be punished by imprisonment for a period not exceeding ten years and a fine not exceeding (30,000,000) thirty million riyals, or both penalties when committing one of the following:<sup>2</sup>

- 1- Receiving, possessing, using, transporting, altering, dispersing, modifying or disposing of nuclear material without obtaining a license, or causing (or being likely to cause) death or serious injury to a person, or serious damage to property or the environment.
- 2- Any violation of the Authority’s regulations related to safety, security, or nuclear safeguards, resulting in serious damage or danger to humans or the environment.
- 3- Stealing or embezzling, or obtaining fraudulent nuclear materials, their belongings, or radioactive materials.
- 4- Transporting nuclear materials, their belongings, or radioactive materials from or to the Kingdom illegally.
- 5- An unlawful act directed against a facility or activity or an act that constitutes interference in the operation of a facility or activity, causes death or harm to a person or causes substantial damage to property or the environment due to the exposure to radiation or the release of radioactive materials.
- 6- Any act that constitutes a request to obtain nuclear or radioactive materials through the threat or use of force or any other form of intimidation.
- 7- Threatening with any of the following:
  - Using nuclear or radioactive materials to cause death or serious physical harm to any person or to cause serious damage to property or the environment.
  - Using nuclear materials to commit any of the acts specified in Paragraph (5) of this Article.
  - Committing any of the acts described in Paragraphs (3) and (5) of this Article with the intention of forcing a person, international organization or state to do or abstain from doing an act.

Article (25) stipulates that "The penalty of imprisonment or the fine stipulated in Article (24) of the system shall not be less than half of its maximum limit if the crime is accompanied by any of the following cases:

- Committing the crime through an organized act.
- The issuance of previous judicial rulings convicting the perpetrator of similar crimes, including foreign rulings.<sup>3</sup>

Article (18) stipulates imprisonment for a period not exceeding five years for anyone who bring into the Kingdom of Saudi Arabia radioactive waste or even attempts to do so or produces, transports, stores, recycles or treats radioactive materials by disposing of them without

<sup>1</sup> From "General Provisions of the Penal System," by A. F. M. Al-Saifi, 1415 AH, King Saud University.

<sup>2</sup> See Article (24) of the Nuclear and Radiological Uses Control System, previous reference.

<sup>3</sup> See Article (24) Article (25) of the Control System for Nuclear and Radiological Uses, previous reference.

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observing the procedures and controls specified by the executive regulations or dumping them or discharging any pollutants or any radioactive waste from ships.<sup>1</sup>

When the violation is repeated in the case of recidivism, the violator shall be punished with imprisonment for a period not exceeding twice the original period (10 years). Imprisonment for a period not exceeding thirty days as a penalty to anyone who throws radioactive waste of all forms in protected areas.<sup>2</sup>

These penalties vary according to the crime committed by the environmental criminal, without prejudice to any more severe penalty stipulated in another law. Anyone who commits any of the violations stipulated in Article (22) of the law shall be punished. Furthermore, anyone who does any of the following shall be deemed to have committed a violation: Carrying out any activity without obtaining a license from the authority, refraining from implementing a decision or directive issued by the authority or its inspectors, providing false data or misleading information to the Authority, or any other action that violates the Authority's regulations or license controls or conditions. The fine, then, does not exceed (20,000,000) twenty million riyals.<sup>3</sup>

The amount of the fine referred to in Paragraph (1) of this Article shall be determined according to the severity and seriousness of the violation committed. Violations shall be considered by a committee of five specialized members - not affiliated with the Authority - whose nomination shall be issued by a decision of the Council of Ministers based on the nomination of the Executive President of the Authority.

There must be at least one statutory advisor among them, and the committee issues its decisions in accordance with the rules and procedures specified by the regulations. Those decisions are subject to appeal before the Administrative Court in accordance with its regulations.<sup>4</sup> Exemption from the penalties prescribed for crimes stipulated in the regulations may be given to any of the perpetrators who takes the initiative to inform the competent authorities what he knows about the crime before starting to implement it.

This would have discovered the crime before it occurred, caught its perpetrator, or prevent its completion. If the reporting occurs after the crime has occurred, he may be exempted from punishment provided that it enables the competent authorities, before starting the investigation, to arrest other perpetrators of the crime or the tools used in it. If the reporting occurs during the investigation, the penalty may be reduced.<sup>5</sup>

Article (18) stipulates a financial fine not exceeding (50,000) five hundred thousand riyals, or both penalties together, with a ruling on appropriate compensation, obliging the violator to remove traces of the violation. Upon repeating the violation in the case of recidivism, the violator shall be punished by increasing the maximum fine, provided that it does not exceed twice as much. The original fine (one million riyal) or both penalties together, along with an award of appropriate compensation and requiring the violator to remove traces of the violation. This penalty applies to anyone who brings into the Kingdom of Saudi Arabia radioactive waste or even attempts to or produces, transports, stores, recycles, or treats radioactive materials by disposing of them without observing the procedures and controls specified by the executive

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<sup>1</sup> See Article (18) of the General Environment Law, previous reference.

<sup>2</sup> See Decision of the Supreme Council of the Gulf Cooperation Council (1997) Unified System for Hazardous Waste Management in the Gulf Cooperation Council Countries.

<sup>3</sup> See Article (22, 23) of the Nuclear and Radiological Uses Control System, previous reference.

<sup>4</sup> See Article (23), previous reference.

<sup>5</sup> See Article (30) previous reference.

regulations, or dumping or discharging any pollutants or any radioactive waste from ships.<sup>1</sup>

The fine ranges from (1,000) one thousand Saudi riyals to (10,000) ten thousand riyals, with the violator required to remove the violation. This penalty applies to actions when industrial facilities do not adhere to the controls and standards for preparing radioactive waste disposal sites.<sup>2</sup> On the other hand, a fine not exceeding (10,000) ten thousand riyals, or both penalties is charged to anyone who throws radioactive waste and waste of all forms in protected areas.

### **Second: Accessory Penalties**

The definition of accessory penalties is: "which follows the ruling with an original punishment and revolves around its existence and non-existence, and this dependency is by the force of the system even if it is not mentioned in the text of the ruling."<sup>3</sup> For examples, these punishments include closing the establishment and prohibiting the practice of activity.

The application to obtain license to manage radioactive waste can be rejected/canceled when incorrect data is provided. Apparently, the license application will be cancelled when dealing with other radioactive waste that is not specified in the license. There will be a warning issued of canceling the license and the violator is obligated to dispose of the waste with the help of another licensed party.<sup>4</sup>

### **Third: Supplementary Penalties**

Confiscation and removal from the job are examples of complementary penalties in the system.<sup>5</sup> A person with a legal capacity may be punished by permanently or temporarily preventing him from carrying out the licensed activity, directly or indirectly, or by closing his facilities, the use of which was associated with the commission of the crime, permanently or temporarily or to liquidate his business.<sup>6</sup> The judge may sentence the violator to a complementary penalty requiring the closure of the facility for a period not exceeding ninety days. This penalty applies to anyone who bring into the Kingdom of Saudi Arabia radioactive waste or even attempts to do so or produces, transports, stores, recycles, or treats radioactive materials by disposal without taking into account the procedures and controls specified by the executive regulations, or dumping or discharging any pollutants or any radioactive waste from ships.<sup>7</sup>

## **Conclusion**

### **The Most Important Findings and Recommendations Include**

#### **First: The Most Important Findings**

- 1) Despite the large amount of legislative texts, the Saudi regulator neglected to establish an accurate, comprehensive definition that prevents this type of crime, which may help determine the reasons and motives that led the regulator to criminalize it.
- 2) The crimes of environmental aggression are sophisticated, complex and of a specific nature.
- 3) The penalties stipulated in the regulations related to the subject of the research are considered very light, and are not proportional to the amount of damage that radioactive

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<sup>1</sup> See Article (18) of the General Environment Law, previous reference.

<sup>2</sup> See Unified System for Hazardous Waste Management, previous reference.

<sup>3</sup> From "Legal Aspects of Protecting the Environment from Pollution," by K. M. Fahmy, 2011, Dar Al-Fikr Al-Jami'i, Cairo.

<sup>4</sup> See Appendix (6/4) General Environmental Law, Violations and Penalties, previous reference, p. 1.

<sup>5</sup> See General Provisions of the Penal System, previous reference, p. 158.

<sup>6</sup> See Article (29) of the Control System for Nuclear and Radiological Uses, previous reference.

<sup>7</sup> See Article (18/2) General Environment Law, previous reference, p. 73.

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waste may cause to the environment, and that there is an overlap between the stipulated penalties.

### Second: The Most Prominent Recommendations

- 1) The need to define a clear and comprehensive definition of the concept of radioactive waste crimes.
- 2) Consider the penalties related to radioactive waste crimes to be commensurate with the gravity of the harm they cause.
- 3) The need to work to protect the environment from pollution, and international cooperation to achieve this goal and to take all appropriate measures to protect and improve the environment.

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