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PRM 38

Section II

POSSIBLE LONG RANGE THEATER NUCLEAR MODERNIZATION

August 16, 1978

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I. INTRODUCTION

This section examines the military issues and related political issues associated with a potential decision to proceed with the deployment of improved long-range nuclear delivery systems in Europe.

First, this section describes the candidate systems for such improvement and the military rationale for providing more long-range capability. Then the section defines the potential European target sets for such systems and lays out the survivability, range and basing considerations applicable to these targets. Next, the section discusses various force levels and the potential for Allies' participation and cost sharing. The section concludes with a qualitative evaluation of eight alternative force postures to illustrate the range of options available and the tradeoffs among those options.

Assumptions and Constraints

Existing NATO documents and the NPG High Level Group Report develop several assumptions and constraints which, if accepted by the U.S. government, would guide or limit the choices of improved systems. With respect to long-range systems:

- There is a need for an "evolutionary" adjustment in NATO TNF that would provide somewhat more in-theater long-range capability than at present.
- NATO's TNF should continue to be modernized consistent with agreed NATO strategy in order that they may continue their essential role in the NATO TRIAD and continuum of deterrence.
- An excessive emphasis on a longer-range strike capability could convey a perception of decoupling, signaling an intention to seek a balance independent of the other elements of the NATO TRIAD.
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- There should be no implication of increased roles for NATO TNF's.
- NATO should seek to maintain the widespread participation of NATO nations in the TNF role.
- Modernization of the TNF must not divert resources from the conventional improvements.
- NATO's long-term modernized NATO TNF can be accomplished within the numbers of warheads associated with the present TNF.

Although existing policies and the views of the HLG provide an extremely important point of departure, and reflect the carefully considered views of the Allies, the systems, targets and alternative force postures examined in this section are not necessarily constrained by this guidance on the presumption that policy makers may wish to examine a broader range of potential improvements.

II. LONG RANGE TNF SYSTEMS

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Cruise Missiles
- Ground-Launched Cruise Missile (GLCM)
- Sea-Launched Cruise Missile (SLCM) (Sub & Surface)
- Air-Launched Cruise Missiles (ALCM)

Ballistic Missiles
- Pershing II Extended Range Ballistic Missile (PIIXR)
- Medium Range Ballistic Missile (MRBM)
- Sub-Launched Ballistic Missile (SLBM)

Dual Capable Aircraft
- F-111, F-16, A-6, A-7 (Particularly [redacted] (b)(1)

Discussion:

A. CRUISE MISSILES:

The cruise missile could carry out [redacted] (b)(1)

(b)(1) [redacted]

The cruise missile should be survivable in all but the most severe threat environments. Cruise missile survivability against present WP defenses derives from its capability to navigate accurately over long range, fly at very low (terrain clearance) altitudes, and remain relatively undetectable due to its low observables (radar cross section, infrared or visual).

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Additionally, the effects of saturation or precision attacks would substantially reduce the capability of these sophisticated air defenses.

- SLCM: A land-attack Sea-Launched Cruise Missile (SLCM) is currently in full scale development with an IOC of 1982. SLCM survivability and flexibility will be determined by the launch platform ships. They have the advantage of being able to deploy to other theaters within a relatively short time and without requiring land bases. SLCMs will require minimal force structure overhead as the delivery platforms already exist.

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- GLCM: The Ground-Launched Cruise Missile (GLCM) will be similar to the TOMAHAWK Sea-Launched Cruise Missile, except it will be land based. As presently envisioned the missile will be carried in centrally-based mobile launchers, each with four tubes. During peacetime, the launchers may be housed in protective shelters at existing MOBs. Each operating base might have 36 launchers with a total of 144 missiles. Operational launchers will have the capability for rapid load-out and dispersal to remote locations. The launch vehicle is accompanied by a mobile communication vehicle and launch control vehicle, and the unit will be self-sustaining for short periods to ensure readiness at dispersed locations.

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ALCMs with a range of over 600km to heavy bombers; consequently, an F-4 equipped with ALCM's would count as a heavy bomber.

B. BALLISTIC MISSILES:

Ballistic missiles such as the Extended Range Pershing II (PIIXR), the Medium Range Ballistic Missile (MRBM) and the Submarine Launched Ballistic Missile (SLBM) would have

(b)(1) [redacted] At the same time, they are relatively more expensive than cruise missiles. As with the cruise missile, the ballistic missile would rely on mobility for pre-launch survivability. In terms of escalation control, ballistic missiles may have advantages over cruise missiles by producing an unambiguous signature which would indicate both their origin and their ultimate target, and

(b)(1) [redacted]

Pershing II Extended Range (PIIXR): PIIXR is a long-range variant of the basic Pershing II missile (1500km) and is currently in the conceptual stage with a projected IOC of no earlier than 1985-1986. Its accuracy would be increased by maneuvering reentry vehicles and an all-weather radar activated in the terminal phase of the trajectory. At the same time, mobility and survivability would be improved somewhat.

- MRBM: The MRBM is currently in the early conceptual phase. The MRBM could be operated in a mobile mode similar to GLCM or Pershing. It should be possible to produce a lightweight, accurate ballistic missile whose transporter could be operated on the existing Western European highway system, similar to GLCM and Pershing, by the late 1980s. With an MRBM System of this size, dispersion and pre-launch survivability should be similar to that of GLCM. The MRBM could be MIRVed.

- SLBM: The Poseidon SLBM weapon system carries sixteen missiles per submarine, each with 6-10 RVs.

(b)(1) [redacted] The UK has four Polaris submarines which will need to be replaced by the end of the 1980s.* The SLBM is the most survivable of the TNF strike systems, since SSBNs on patrol are virtually immune from detection. The characteristics of the system make SLBMs a good general nuclear response weapon.

(b)(1) [redacted] As with SLCM, they are not a visible sign of NATO's TNF capability.

C. DUAL-CAPABLE AIRCRAFT (DCA):

DCA can, attack mobile or multiple targets, be retargeted or recalled in flight, fly a number of sorties and evade enemy defenses. In addition,

* France has its own SSBN force, with 64 SLBMs.

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D. EFFECT OF SYSTEM MIXES ON MILTARY EFFECTIVENESS.

While each of the systems previously described has specific operational characteristics, their military utility and survivability by designing force postures can be enhanced by employing a mix of different weapons systems, but the costs could increase.

For example:

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- Ballistic missiles have a greater capability against mobile and/or time-sensitive targets. DCA, because of the presence of an on-the-scene observer, can within limits carry out terminal aim point selection, mission abort, or bomb damage assessment of earlier strikes.

- Mobile systems on land and at sea substantially complicate the planning of preemptive attacks.

- Fixed land-based systems probably provide the highest degree of responsiveness, in terms of timeliness.

Any improvement to the long-range element of theater nuclear forces must

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E. ALLIED REACTIONS TO LONG-RANGE CANDIDATE TNF SYSTEMS

While the primary purpose of the next meetings of the High Level Group will be to hear Allied views, we do have some idea as to their potential reactions.

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Insofar as mixes of systems are concerned, it is conceivable that packages including more DCA and either PIIXR or GLCM might be saleable in the Alliance, but not if we excluded a particular system on principle (e.g., no GLCM because it complicates SALT rather than on military and cost-effectiveness grounds.

III. MILITARY RATIONALE, OPERATIONAL FACTORS, BASING, SURVIVABILITY AND RANGE CONSIDERATIONS

A. MILITARY RATIONALE

NATO's fundamental objective is to deter Warsaw Pact aggression. To achieve a credible deterrent it is essential that rational and feasible military options be available, which are founded on responsive, survivable, and militarily effective forces sifficient to meet any type or level of aggression. In addition, this force capability must be clearly recognizable by the Warsaw Pact as evidence of NATO's resolve to escalate the conflict to general nuclear war, if necessary.

The NATO TRIAD with its component parts of conventional, theater nuclear, and strategic nuclear forces has been developed to enable the Alliance to execute the strategy of flexible response. Within the TNF leg of the TRIAD, NATO maintains a mix in both quality and quantity of battlefield, maritime, medium, and long-range strike systems to serve as bridge between conventional and strategic forces.

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Survivable, accurate, reliable, long-range, TNF contribute to a full range of NATO options:

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1. Selective Nuclear Response

Through the selective use of nuclear weapons, NATO confronts the enemy with the threat of further escalation, thereby inducing him to recalculate his risks and make the political decision to stop aggression and withdraw.

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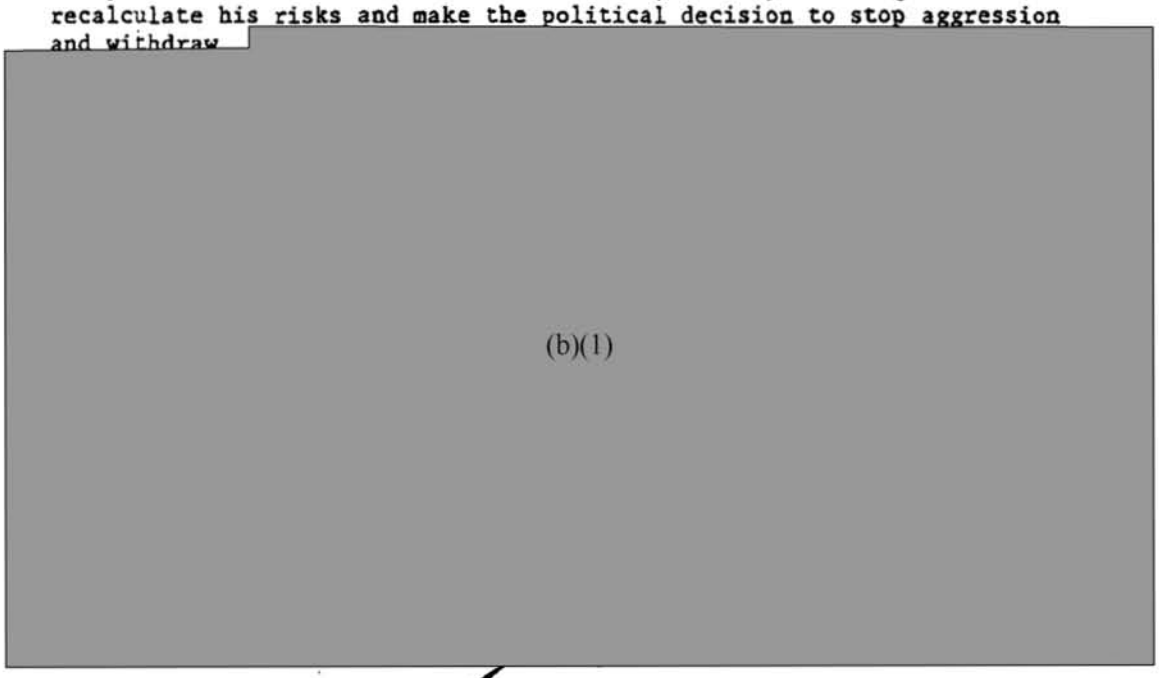

2. General Nuclear Response

In case of general nuclear response, where an aggressor has clearly committed himself to all-out victory, nuclear employment then is governed primarily by the military objective to defeat the enemy through the attrition of his physical capacity to continue the war.

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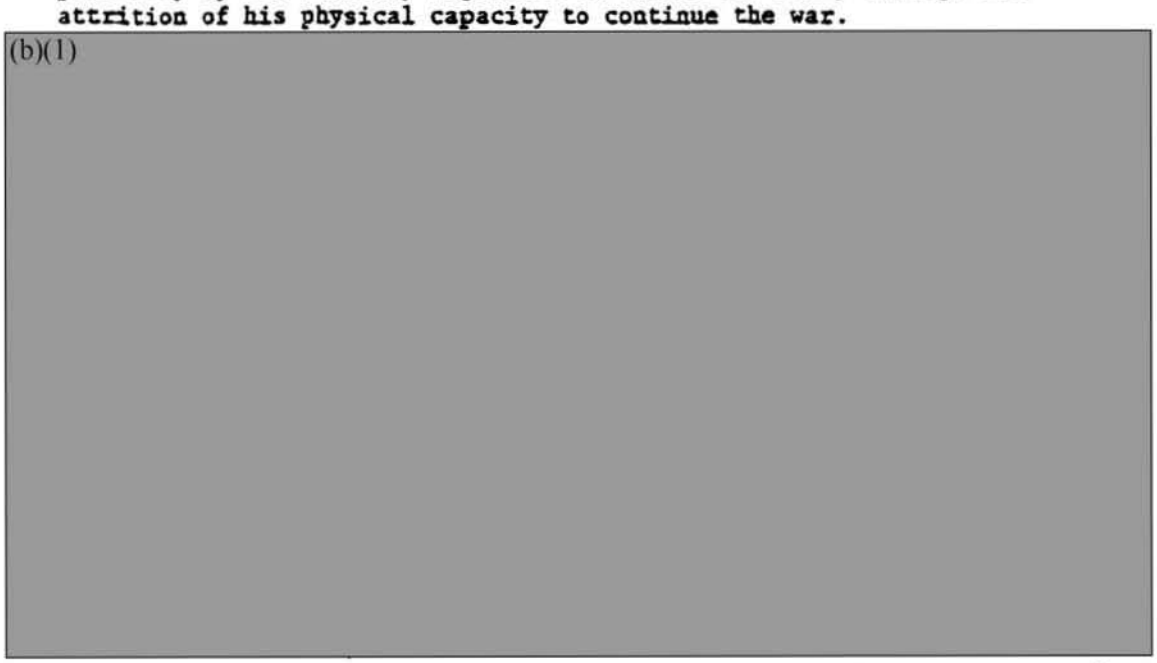

B. OPERATIONAL FACTORS

The underlying principles for determining operational factors/ considerations are the capability to place reliably a weapon on a target and the effect that capability or weapon can have on the political and military situation as well as force sizing requirements. Many of these factors/considerations are common to both selective use and general nuclear response, while some are unique to the particular use.

1. Common Factors

The long range systems currently scheduled to carry out NATO's Selective and General Nuclear Response include POSEIDON, POLARIS, PERSHING, and aircraft (F-111, Vulcan, F-4, F-104, F-100, Jaguar, A-6, A-7, Buccaneer). These systems are limited in their ability to strike all types of fixed

(b)(1) targets in [redacted] PERSHING 1A is not, of course, available against most of the targets facing the Northern and Southern Region nor does it cover targets in the Soviet Union. POSEIDON could be used in any region provided selective release targeting objectives could be accommodated within the

MIRV characteristics of the system (footprint) and that the fixed yield and accuracy of the system enable target damage objectives to be achieved without unacceptable collateral effects. For example, POSEIDON would not be suitable against hard targets or targets requiring low yields. In addition, the disclosure of a submarine's position by the launch of a missile could jeopardize the survivability of the submarine and its remaining missile systems. The DCA in the theater nuclear role are subject to attrition while carrying out their conventional missions, and subject to further losses when penetrating Warsaw Pact air defenses while executing long-range missions.

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2. Selective Use Factors

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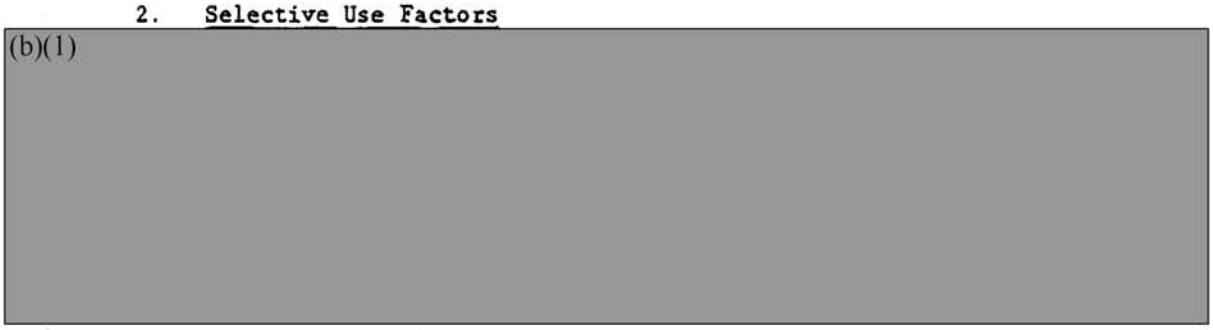

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3. General Nuclear Response Factors

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4. Unique Advantage of Land-Based, Long Range TNF

European continental-based long-range TNF systems, though perhaps more vulnerable than sea-based systems, nonetheless, offer inherent political and military advantages to NATO, by:

- Serving as a direct and visible link between NATO's territorial integrity and risk to the Soviet homeland in the event of armed aggression by the Warsaw Pact.

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- Providing expanded opportunities for Allied participation and risk sharing in deterrence or the conduct of the war.

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- Providing additional options which can prevent the enemy from predicting with confidence NATO's specific response, thus encouraging him to conclude that an unacceptable degree of risk would be involved regardless of the nature of his attack.

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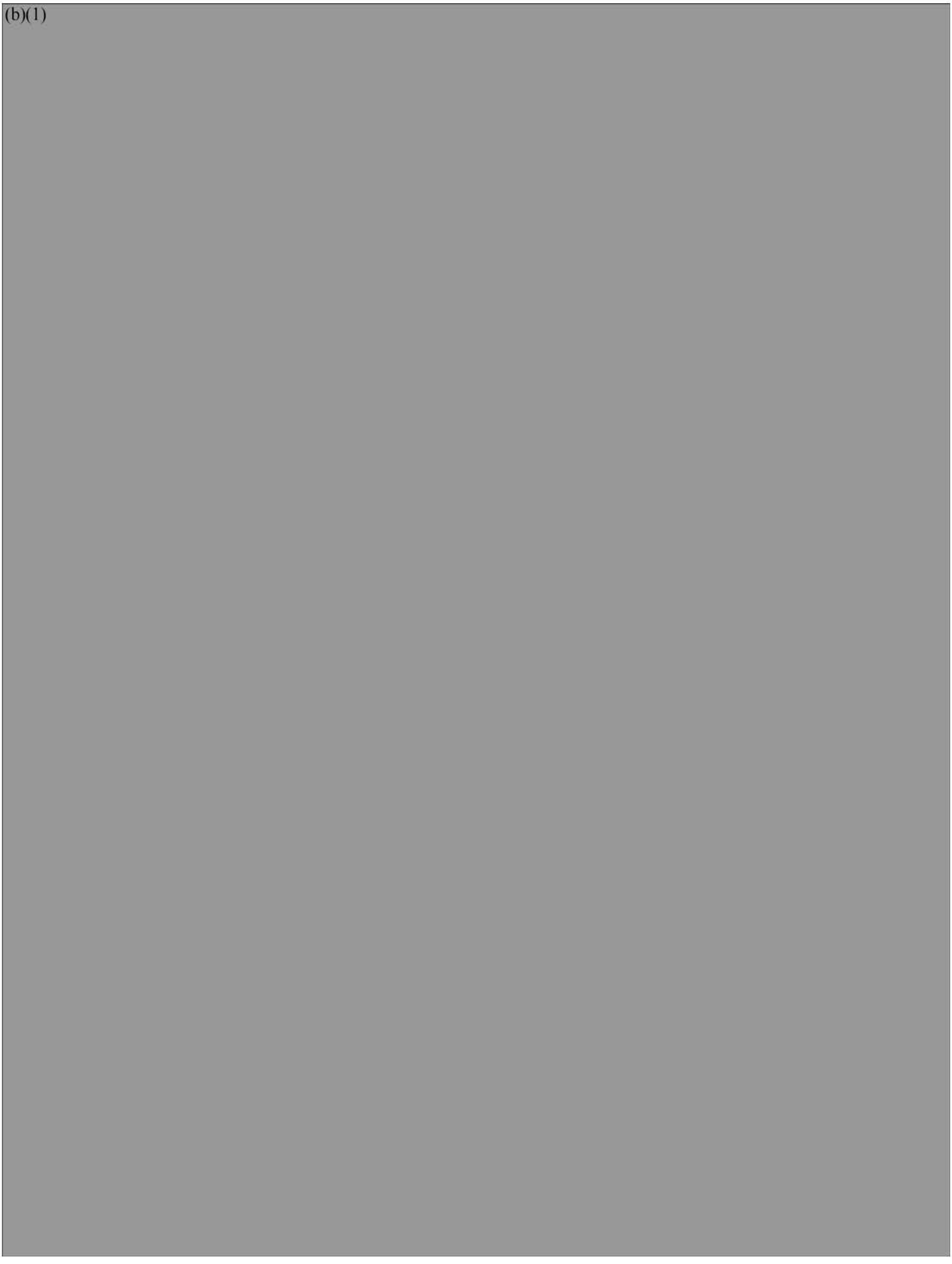
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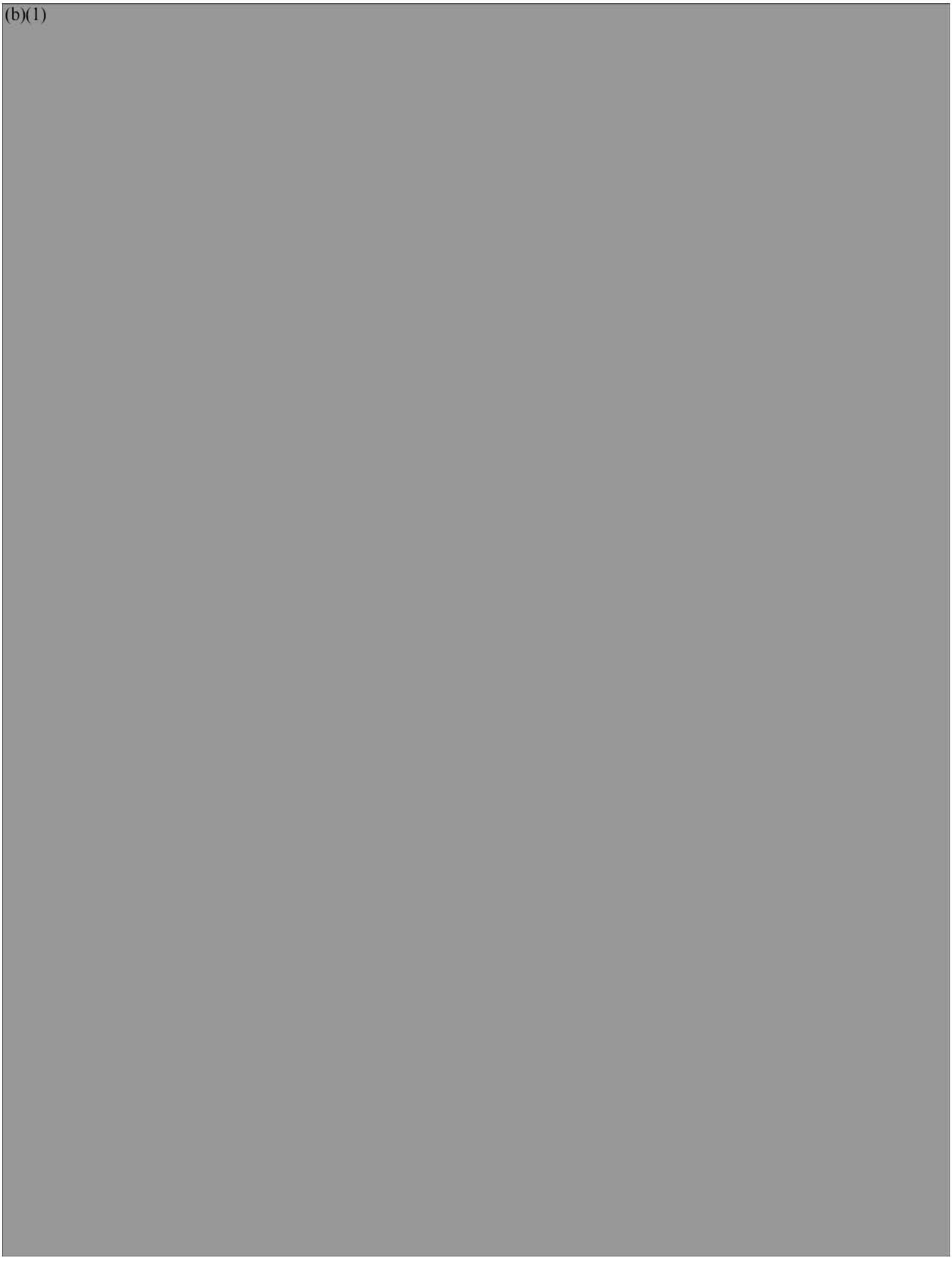
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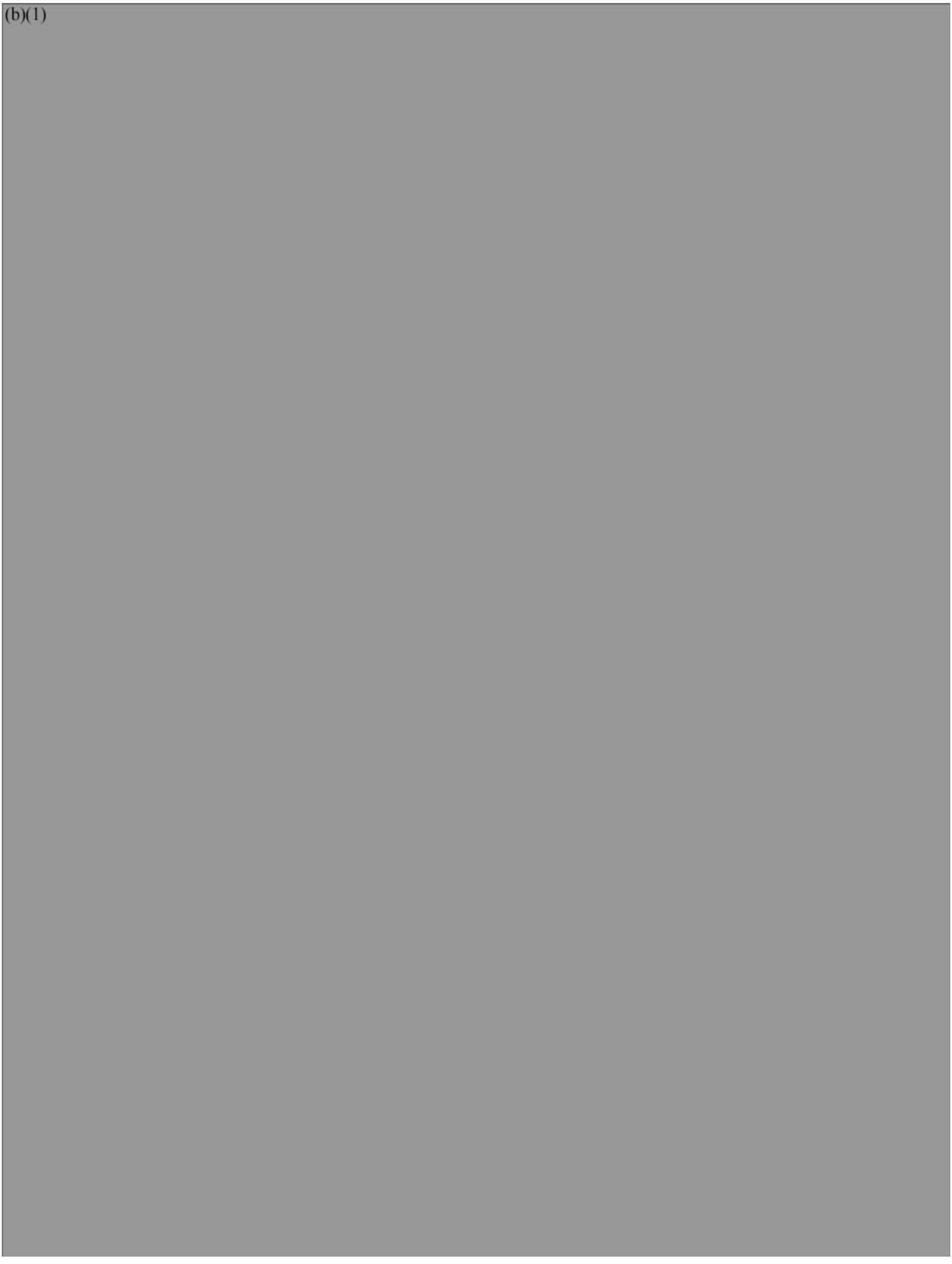
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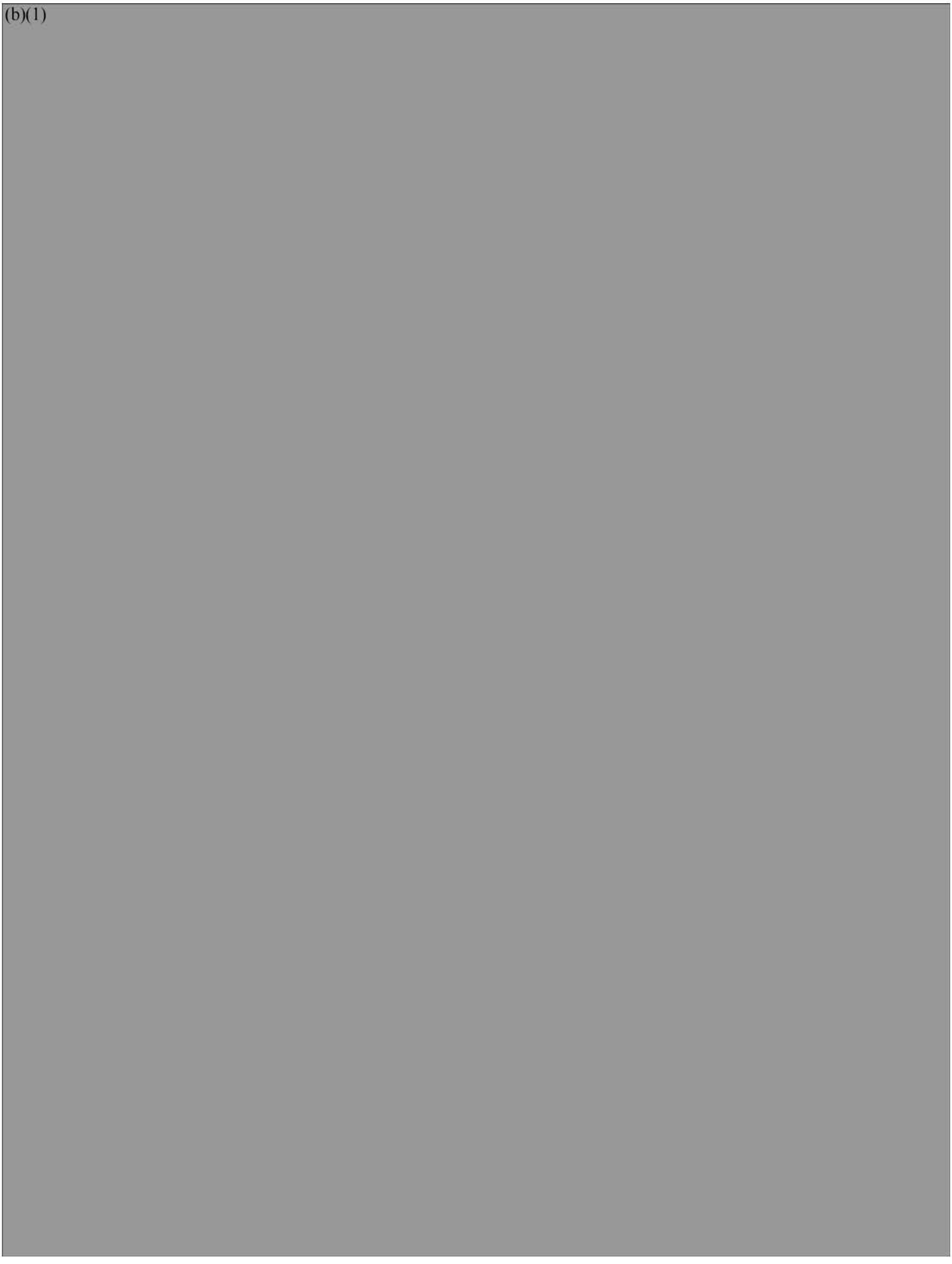
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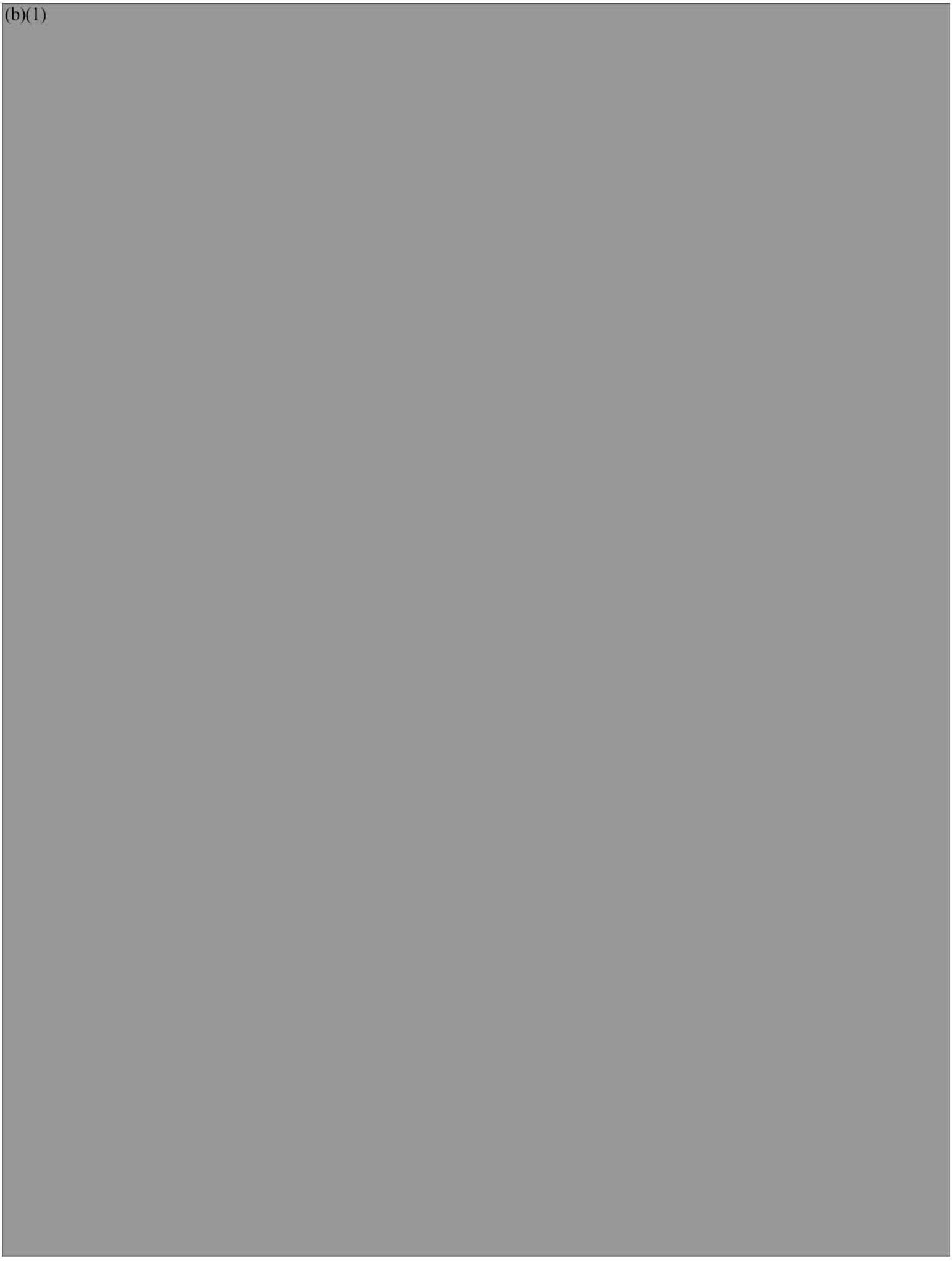
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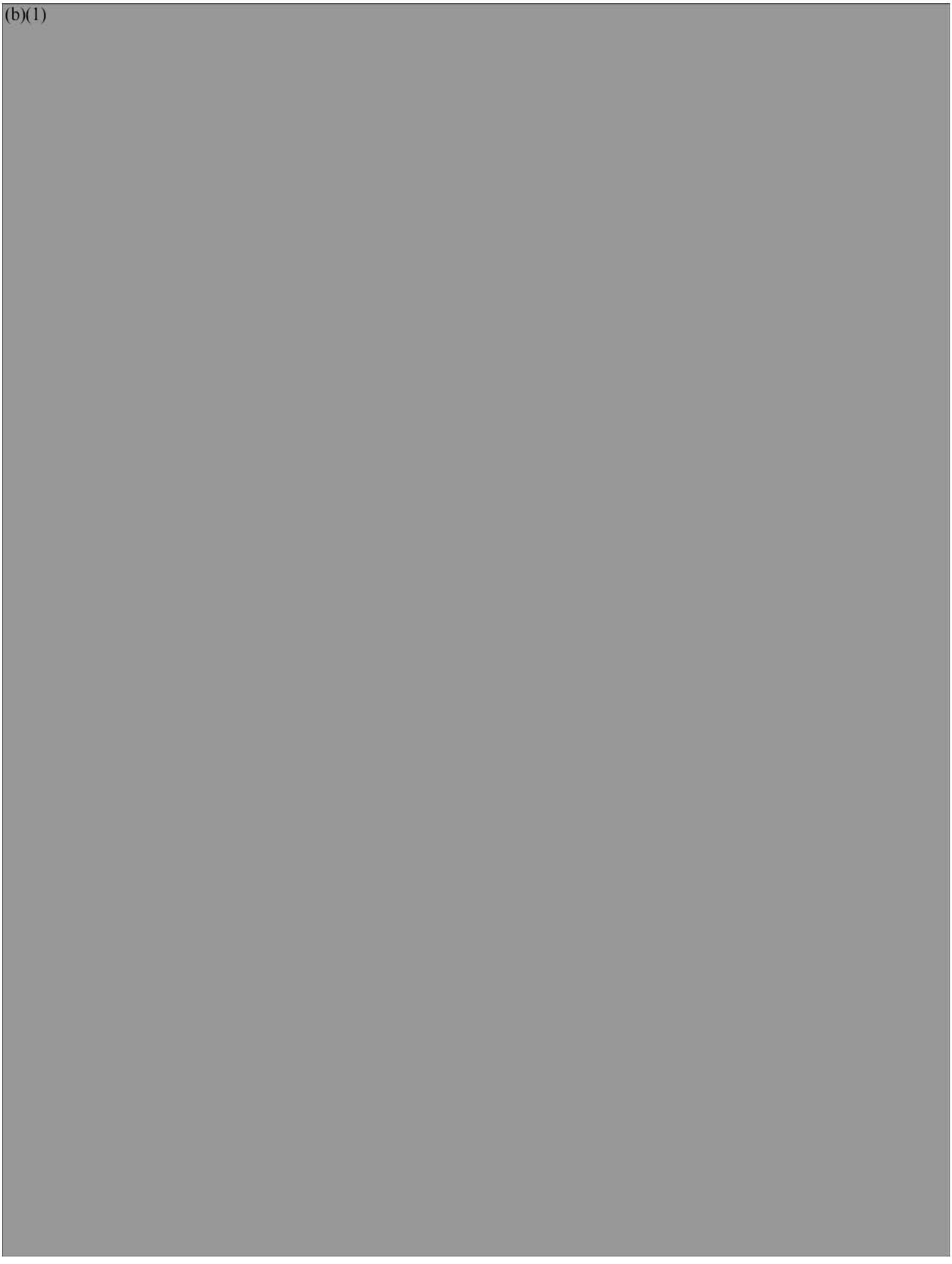
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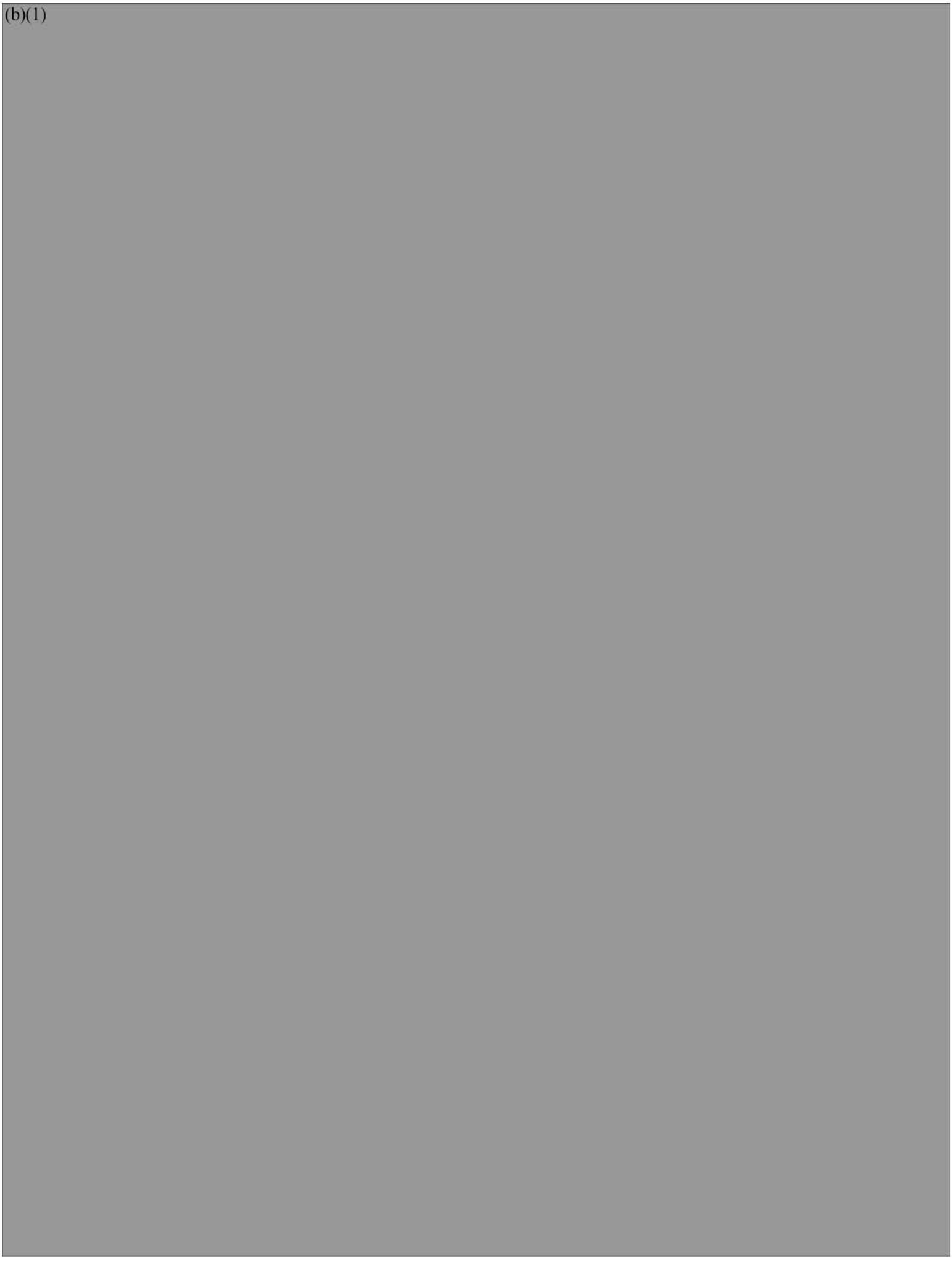
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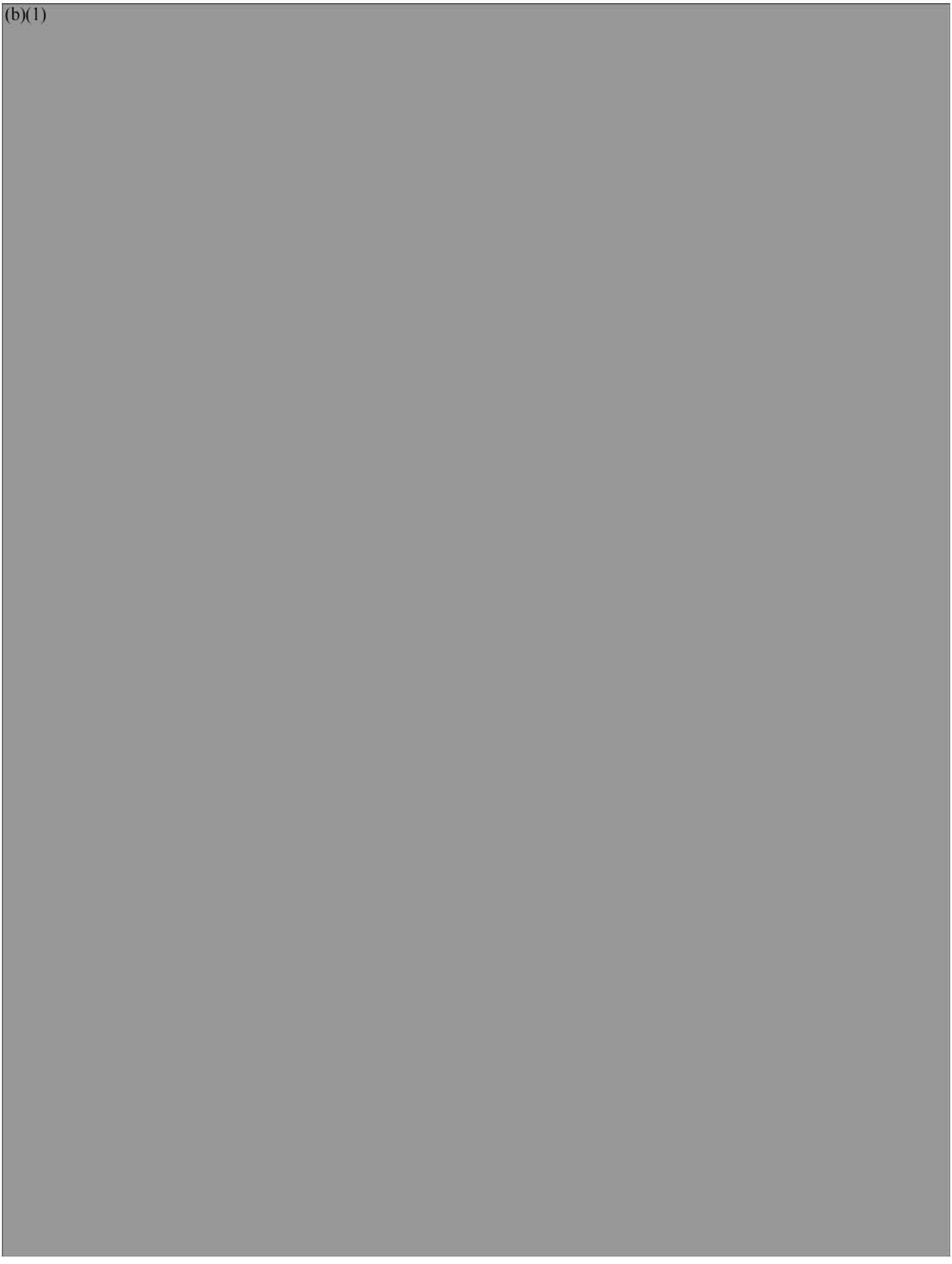
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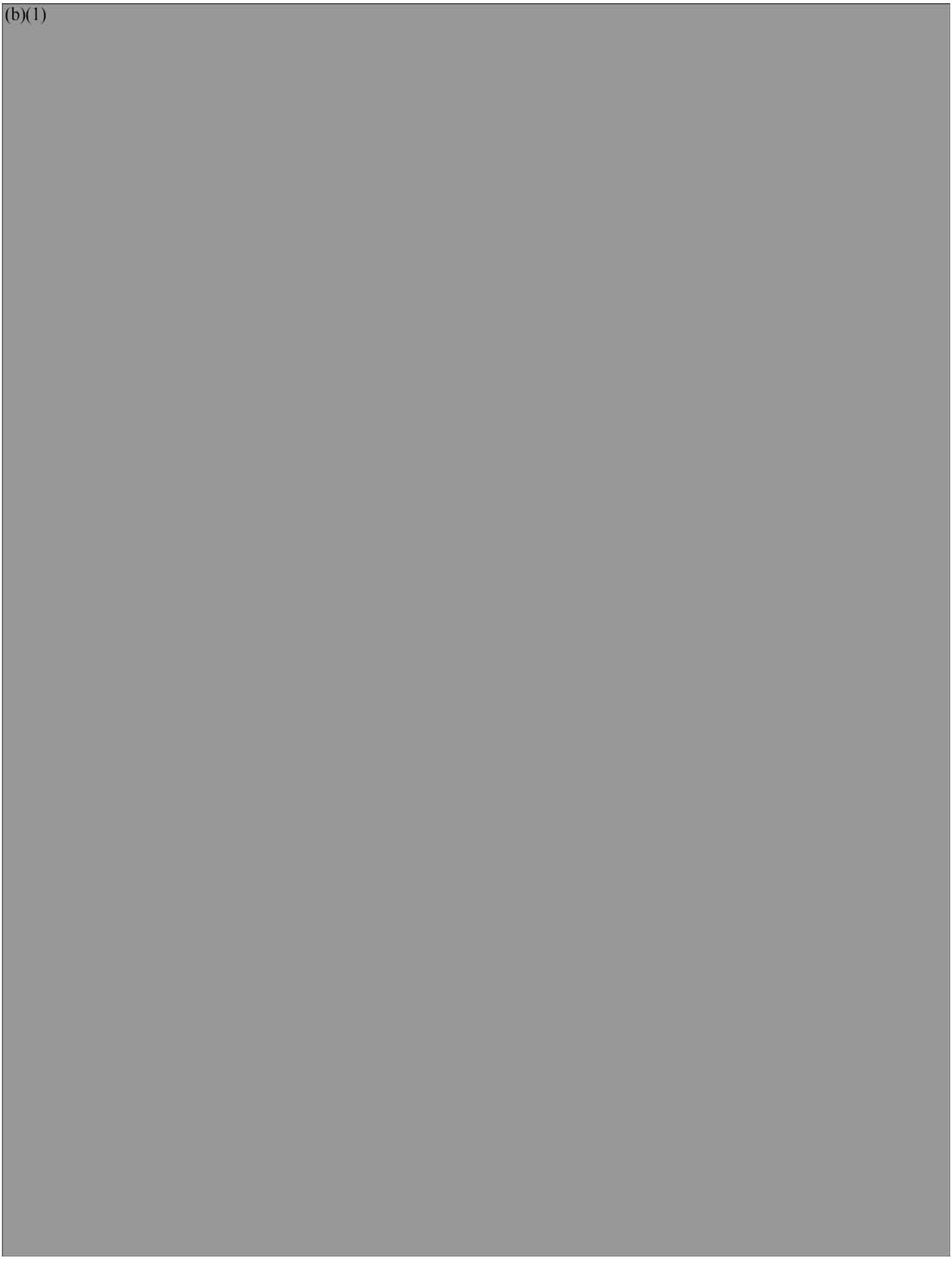
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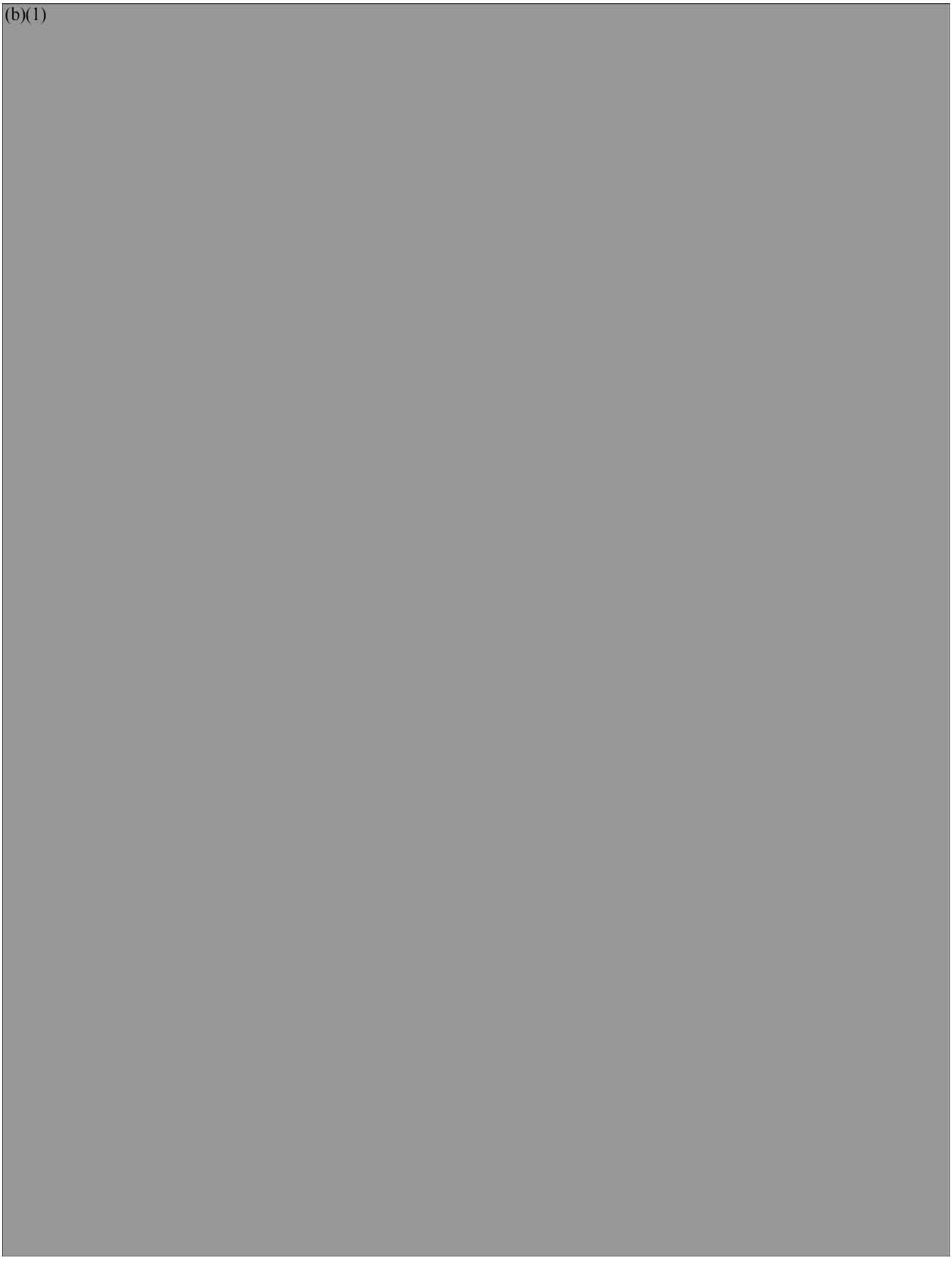
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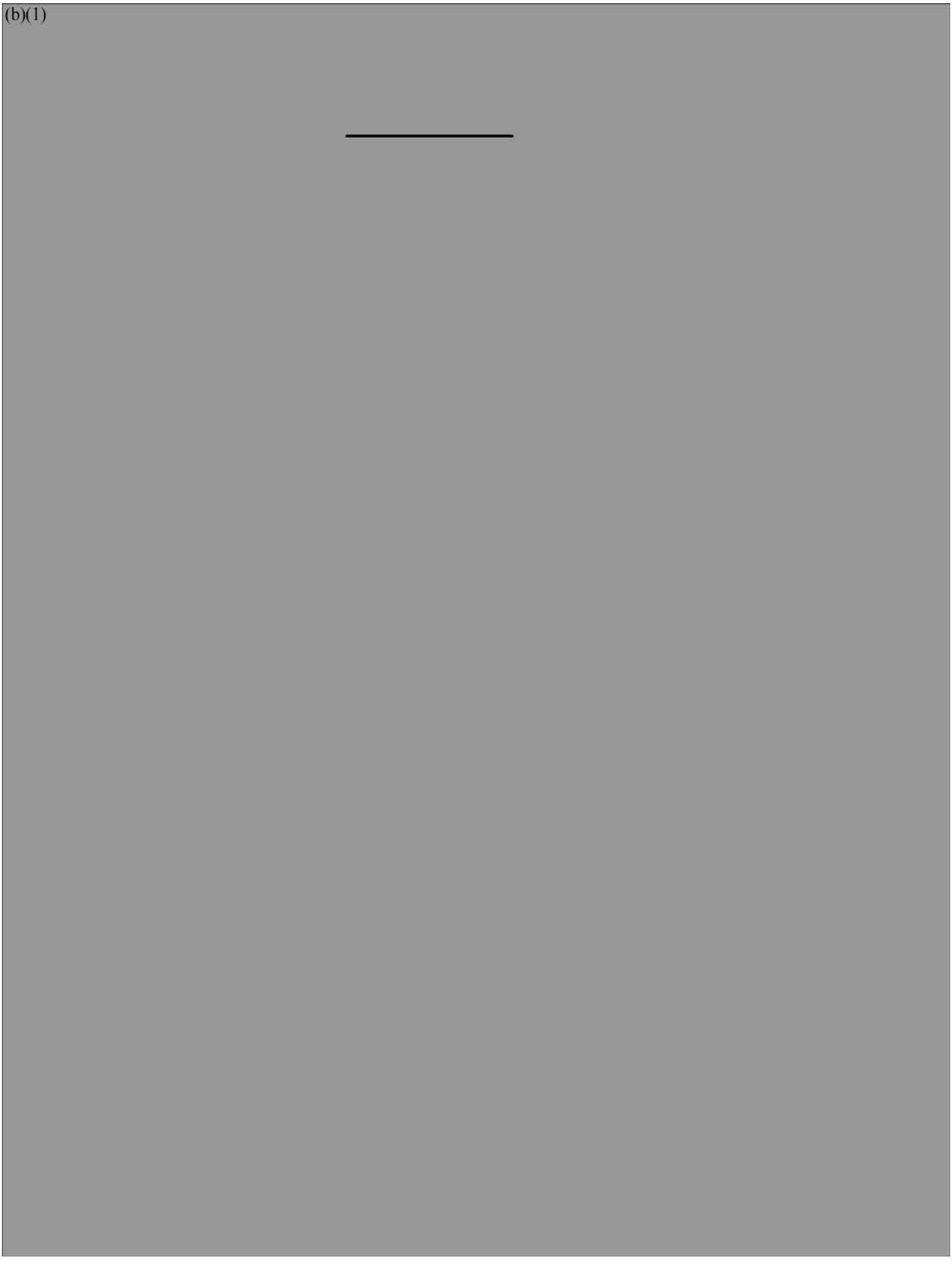

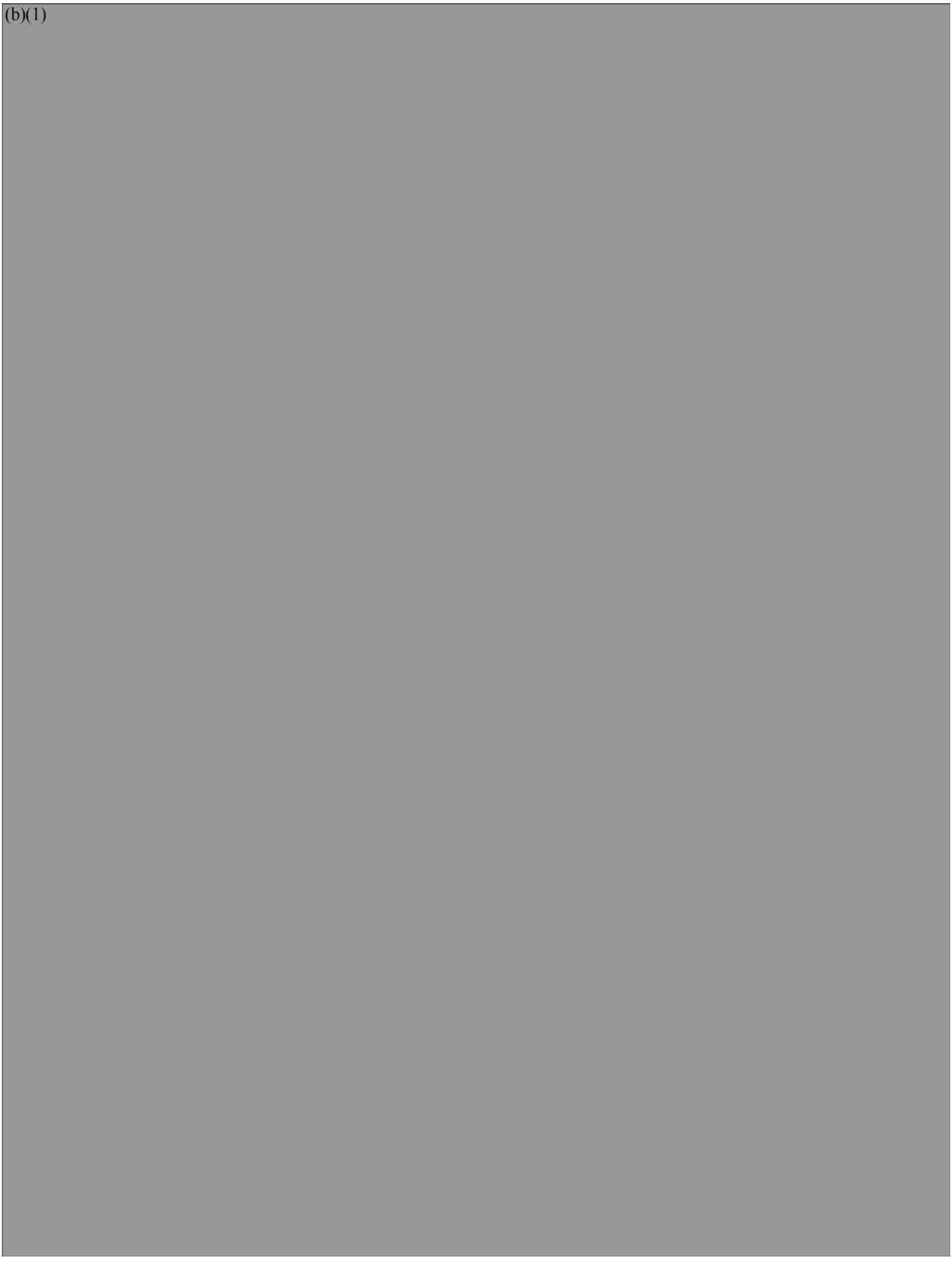
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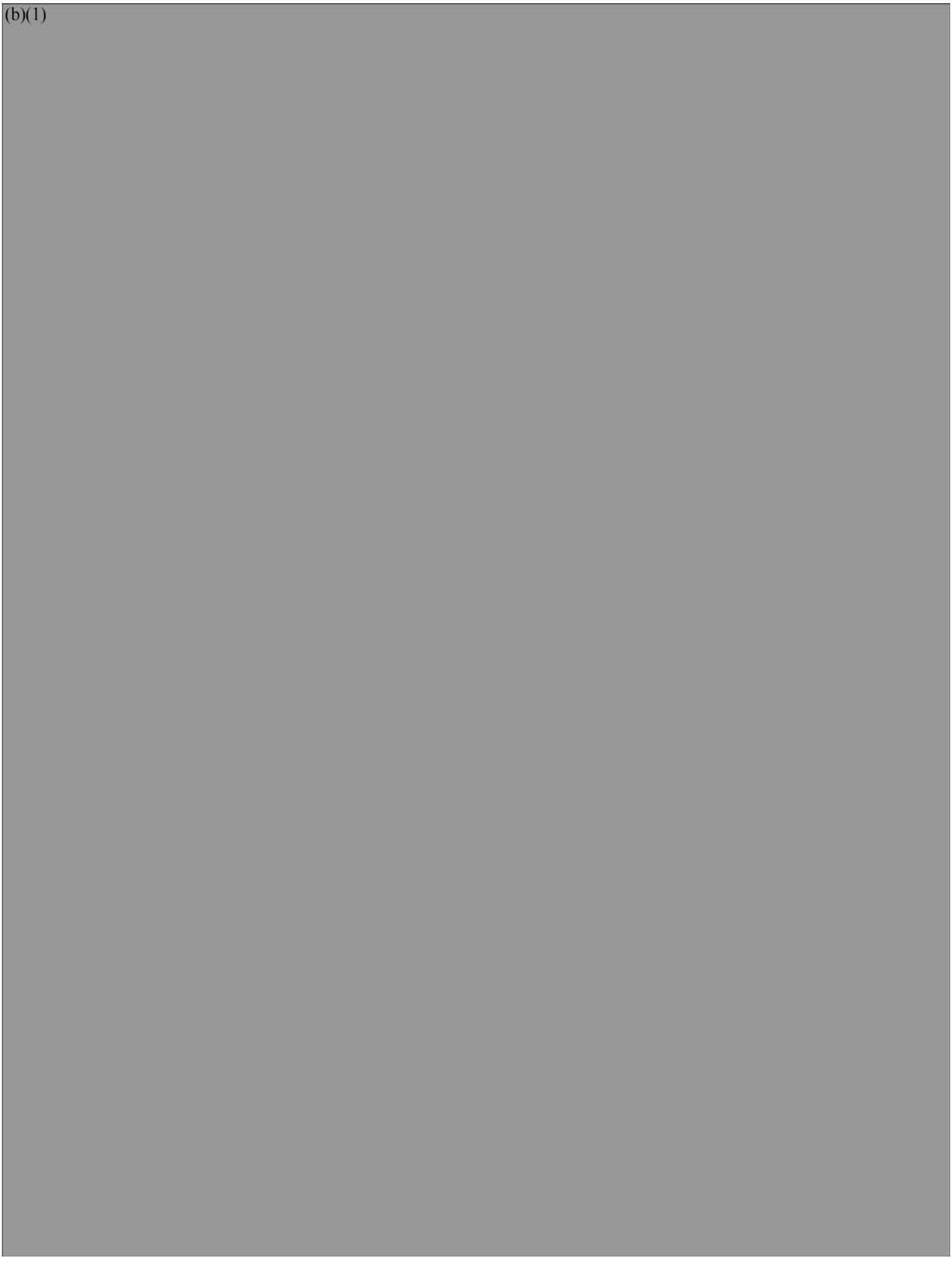
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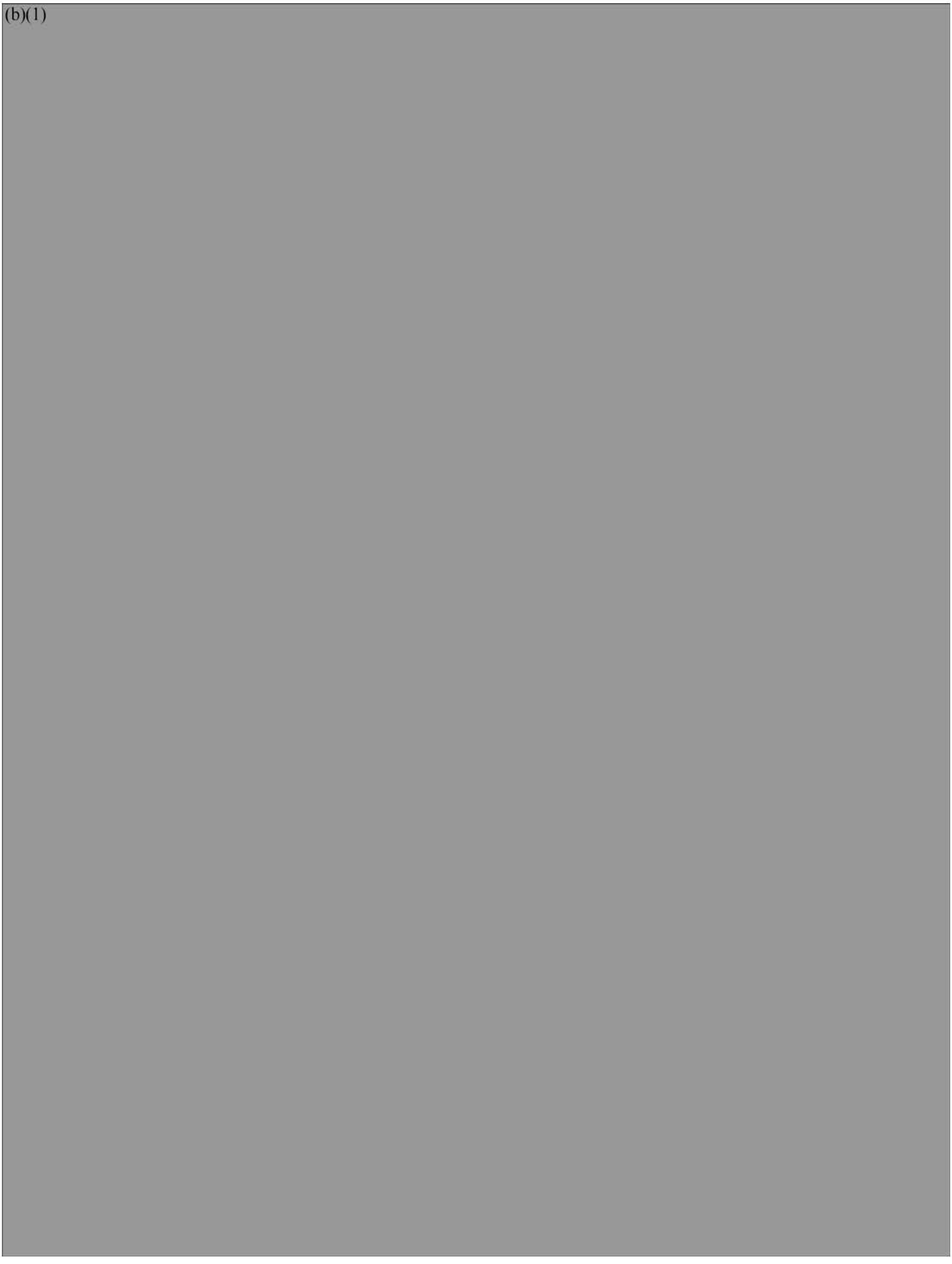
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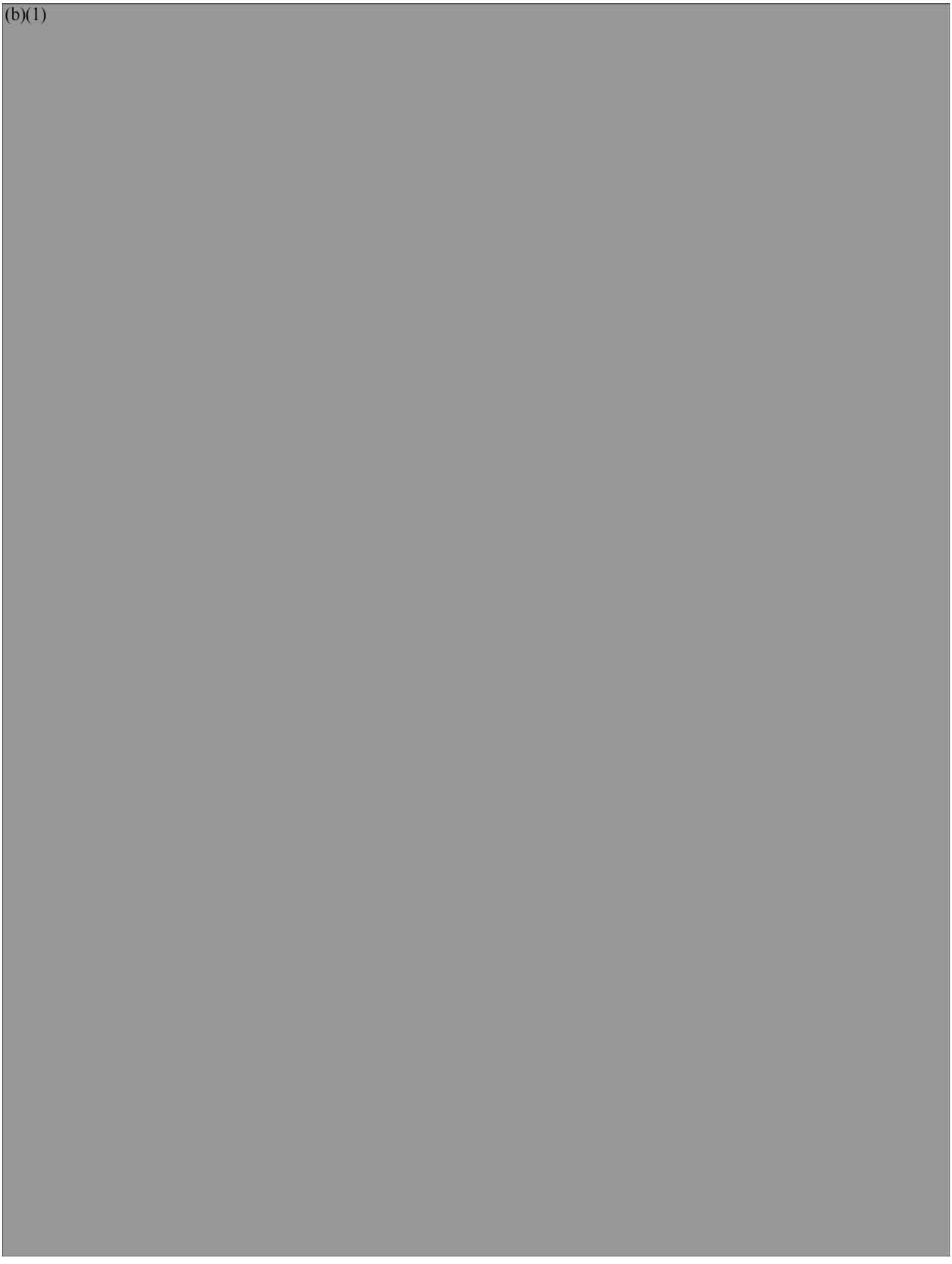
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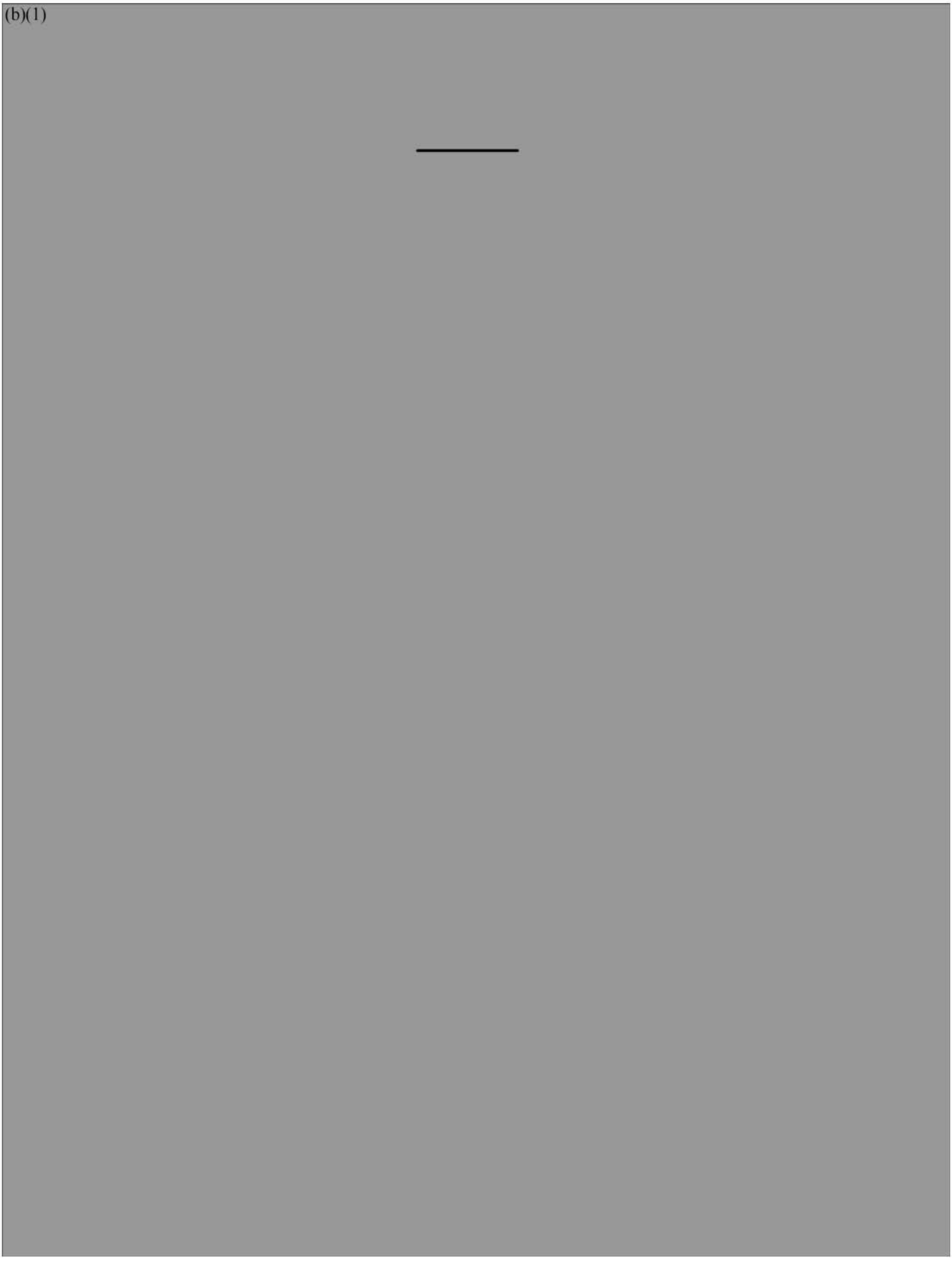

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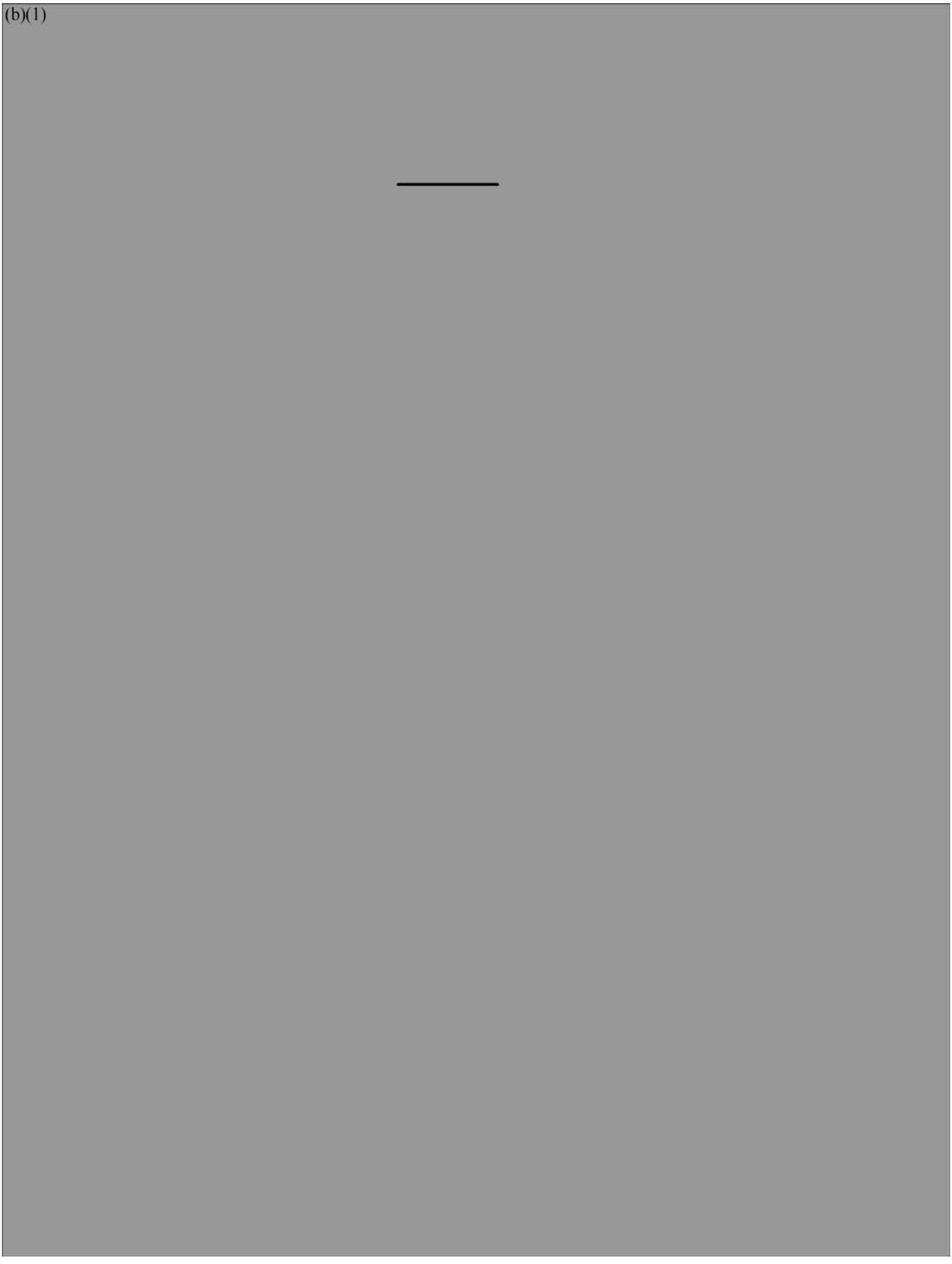

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